IBM WebSphere Business Integration
Connect Enterprise and Advanced Editions

Installing Business Integration Connect

Version 4.2.1

Note!

Before using this information and the product it supports, be sure to read the general information under "Notices and Trademarks," on page 95.

16February2004

This edition applies to Version 4, Release 2, Modification 1, of IBM® WebSphere® Business Integration Connect Advanced Edition (5724-E75) and Enterprise Edition (5724-E87), and to all subsequent releases and modifications until otherwise indicated in new editions.

IBM welcomes your comments. You can send to the following address:

IBM Burlingame Laboratory
Information Development
577 Airport Blvd., Suite 800
Burlingame, CA 94010
U.S.A

Include the title and order number of this book, and the page number or topic related to your comment.

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

Table of Contents

About this book

This book covers IBM WebSphere Business Integration Connect Advanced Edition Version 4.2.1 and IBM WebSphere Business Integration Connect Enterprise Edition Version 4.2.1, and includes the following information:

- A description of the prerequisites that you must have installed before you install Business Integration Connect.
- Information to help you plan for the installation.
- Descriptions of several deployment configurations that you can use.
- Instructions to run Business Integration Connect's installation wizards.
- Instructions on how to start Business Integration Connect and log in.
- Instructions for uninstalling Business Integration Connect.

After you have installed Business Integration Connect, consult the Administration guide for the steps that you should take to set up the community.

Audience

This guide is for the IT professionals responsible for installing Business Integration Connect, and assumes that you are familiar with the following:

- At least one of the following operating systems:
    - Linux
    - Solaris
    - AIX
    - Windows 2000
- DB2 or Oracle 9i
- WebSphere MQ
- B2B concepts
- Business processes
- Security
- Environment planning

In the Business Integration Connect environment, there are four types of administrative users: Hub Admin and Operator Admin (the Community Operator's administrative users), Manager Admin (the Community Manager's administrative user), and Participant Admin (the Participant's administrative user). These users may participate in the installation and configuration of the product in the following ways:

Hub Admin

- Perform environment planning to optimize scalability and load balancing.
- Ensure that prerequisites are installed.
- Install Business Integration Connect.
- Configure system parameters.

Operator Admin

- Configure connections available to the hub-community.
- Manage access to the console by the Community Operator's employees.

Participant Admin

- Configure system parameters.

For more information on these users, see the IBM WebSphere Business Integration Connect Administrator Guide.

Typographic conventions and terms

Typographic conventions

This document uses the following conventions.

bold	Indicates something you select in the User Interface. Also indicates a new term the first time that it appears.
`Courier font`	Indicates a literal value, such as a command name, file name, information that you type, or information that the system prints on the screen.
italic	Indicates a variable name or a cross-reference. When you view an IBM WebSphere Business Integration Connect document as a PDF file, cross-references are both italic and blue. You can click on a cross-reference to jump to the target information.
italic *courier*	Indicates a variable name within literal text.
	Separates a code fragment from the rest of the text.
blue outline	A blue outline, which is visible only when you view a manual online, indicates a cross-reference hyperlink. Click inside the outline to jump to the object of the reference.
ProductDir	Represents the directory where the product is installed.
{ }	In a syntax line, curly braces surround a set of options from which you must choose only one.

|	In a syntax line, a pipe separates a set of options from which you must choose one and only one.
[ ]	In a syntax line, brackets surround an optional parameter.
...	In a syntax line, ellipses indicate a repetition of the previous parameter. For example, option[,...] means that you can enter multiple, comma-separated options.
< >	Angle brackets surround individual elements of a name to distinguish them from each other, as in <server_name><connector_name>tmp.log.
/. \	In this document, backslashes (\) are used as the convention for directory paths. For UNIX installations, substitute slashes (/) for backslashes. All product pathnames are relative to the directory where WebSphere Business Integration Connect is installed on your system.
UNIX:/ Windows:	Paragraphs beginning with either of these indicate notes listing operating system differences.

Related documents

The complete set of documentation describes the features and components common to all installations of IBM WebSphere Business Integration Connect Enterprise and Advanced Editions, and includes reference material on specific components.

You can download, install, and view the documentation at the following site:

http://www.ibm.com/software/integration/wbiconnect/library/infocenter

Terms

Business Process: A predefined set of business transactions that represent the steps required to achieve a business objective.

Community Console: The Community Console is a Web based tool used to configure IBM WebSphere Business Integration Connect and to manage the flow of your company's business documents to and from your Community Manager or Participants.

Digital Certificate: A digital certificate is the electronic version of an ID card. It establishes your identify when you perform B2B transactions over the Internet. Digital certificates are obtained from a Certificate Authority.

Document: A collection of information adhering to an organizational convention. In this context, there are multiple documents in a process.

Hub Community: The environment comprised of the Community Manager, Community Operator, and Community Participants.

Community Manager: The company that purchased and distributed WebSphere Business Integration Connect to members in their hub-community. The Community Manager has one administrative user, the Manager Admin, who is responsible for the health and maintenance of the Community Manager's portion of the community.

Community Operator: The individual responsible for the configuration and overall health and maintenance of the system, hub-wide.

Community Participant: The Participant sends business transactions to and receives business transactions from the Community Manager. The Participant can access Community Console features that support their role in the community.

Getting help

Software Support:

www.ibm.com/software/support/

Passport Advantage:

www.ibm.com/software/howtobuy/passportadvantage/

Product documentation

www.ibm.com/software/integration/wbiconnect/library/infocenter

Chapter 1. Before you begin

This chapter describes the platform, hardware, and software required to install and run the Enterprise and Advanced Editions of Business Integration Connect.

The Environment planning section identifies items that you should consider before you install, to ensure that you create an optimal installation.

Finally, this chapter includes information on several deployment configurations that you can use to install Business Integration Connect.

This chapter contains the following sections:

Platform, hardware, and software requirements

Tables 1 and 2 list hardware requirements for the operating systems currently supported by Business Integration Connect and also identify products that must be installed before you install Business Integration Connect.

Table 1: Server requirements

Server	Version	Hardware recommendations:
Red Hat Enterprise Linux Advanced Server (Intel)	2.1 with update 2 or later	• 2GHz Intel Xeon processor. • Minimum 2GB RAM. • Minimum 500 MB available disk space for application. • Additional disk space for document storage, 30 GB recommended. • Administrator privileges • Root login • Additional servers for added capacity and redundancy. • Multi-server installations require network attached shared storage • DB2 8.1 FP2 or Oracle 9.2.0.1 should be installed and a database instance should be created

Table 1: Server requirements

Server	Version	Hardware recommendations:
Microsoft Windows Server	2000 with Service Pack 3 or higher	• 1.4 GHz or faster Intel Xeon processor • Minimum 2GB RAM • At least 500 MB of available hard disk space • Administrator privileges • Root login • Multi-server installations require network attached shared storage • DB2 8.1 FP2 or Oracle 9.2.0.1 should be installed and a database instance should be created
AIX	5.2 plus APAR IY44183 or with recommended maintenance package 5200-01 plus APAR IY44183	• 600 Mhz or faster processor • Minimum 2GB RAM • At least 500 MB of available hard disk space • Administrator privileges • Root login • Multi-server installations require network attached shared storage • DB2 8.1 FP2 or Oracle 9.2.0.1 should be installed and a database instance should be created
Solaris	8, with recommended patch cluster of April 2003	• 750 MHz or faster UltraSparc or faster processor • Minimum 2GB RAM • At least 500 MB of available hard disk space • Additional disk space for document storage, 30 GB recommended • Administrator privileges • Root login • Multi-server installations require network attached shared storage • DB2 8.1 FP2 or Oracle 9.2.0.1 should be installed and a database instance should be created

Table 1: Server requirements

Server	Version	Hardware recommendations:
SuSE Linux Enterprise Server for x86	8.0, with SuSE Linux kernel 2.4	• 2GHz Intel Xeon processor. • Minimum 2GB RAM. • Minimum 500 MB available disk space for application. • Additional disk space for document storage, 30 GB recommended. • Administrator privileges. • Root login • Additional servers for added capacity and redundancy. • Multi-server installations require network attached shared storage • DB2 8.1 FP2 or Oracle 9.2.0.1 should be installed and a database instance should be created

Table 2 lists software that Business Integration Connect uses or may use. These applications can reside anywhere on your network, although it is recommended that your RDBMS and WebSphere MQ reside on dedicated servers.

Table 2: Other software used by Business Integration Connect

Item	Version	Notes
IBM DB2 Universal Database Enterprise Server Edition Or: Oracle 9i	8.1 with fix pack 2 or later 9.2. with Oracle JDBC thin driver or later	Required to persist Business Integration Connect data. DB2 should be installed on a dedicated server. Business Integration Connect will install a set of database stored procedures for its use. Verify that your DB2 installation is configured for installation and configuration of Stored Procedures; in particular, DB2 will need access to a C/C++ language compiler. You must also supply the JDBC driver. You can download it from the OTN website. It's also installed with Oracle 9i.
WebSphere MQ with: • Java™ Message Service (JMS) • MA0C MQSeries - Publish/Subscribe SupportPac	5.3 with CSD04 or later	Required to handle messaging between the components of Business Integration Connect. WebSphere MQ should be installed on a dedicated server. To obtain CSD04, go to http://www.ibm.com/software/integration/support/SupportPac/ and click U486878(CSD04)
Simple Mail Transport Protocol (SMTP) based e-mail relay server		Required for e-mail alerts, SMTP message delivery, and outbound transport.
ProFTPD or other FTP server		Only required if you plan to use FTP. You can obtain ProFTPD from www.proftpd.org. Business Integration Connect includes Perl scripts to configure ProFTPD. If you use a different FTP server, you must modify the scripts accordingly, or configure the server manually.
Shared network storage such as Network Attached Storage (NAS)		Required only for a multi-server environment.

The following table lists the software required by a client to access the Community Console.

Table 3: Requirements to use the Community Console

Item	Version	Notes
One of the following browsers: Netscape Navigator Microsoft Internet Explorer	 6.0 or later 5.5 or later	Required to use the Community Console.
Screen resolution setting		1024 x 768 recommended

Environment planning

This section lists some of the things you should consider before installing Business Integration Connect. The planning enables you to decide on the exact deployment topology that fits your requirements.

Availability

System downtime can seriously affect your business productivity and profitability. When you create a high availability system, you are ensuring your hub-community that the system is always up and running and ready to receive documents. A typical high availability environment ensures that the system is working 99.9 percent with some systems achieving 99.999 percent of the time. Availability levels can decrease due to events such as system failure, system overload, network congestion, and network attacks. To maximize availability, you need to provide system redundancy. You can accomplish this by having at least two implementations of each logical function (Community Console, Receiver, and Document Manager) on separate servers in your architecture. Therefore, if you place all three components on one server, you need a second server to provide redundancy. If you separate each component onto its own server, you need six servers in total to provide redundancy. Additionally, you should consider creating another set of servers in your disaster recovery location so that you can run the system from that location.

To create a highly available Business Integration Connect implementation, its supporting infrastructure (such as network, Internet connection, even power coming into your facility) must also be highly available. The high availability requirement also applies to MQ and your RDBMS. If either of these supporting software fails, your production environment will fail.

Scalability

Business Integration Connect scales horizontally. That is, you increase its processing ability by adding instances of its components. The actual number of servers, instances of a particular component, or network capability that you will need depends on the following factors:

- **Community Size** A large number of partners connecting to a hub means that more users will be accessing the hub. You may need to increase the number of Community Console instances and increase the capabilities of your database to support this.
- **Document volume** A larger number of documents sent by Community Participants and Community Manager means that you may need to increase the number of Document Manager instances and increase the capabilities of WebSphere MQ.
- **Complexity of flows** Process flows that are complex require more Document Manager instances to handle them.
- **File Size** Large files require more network bandwidth and impact the shared file service compared to small files.
- **Document flow** If the number of documents being received spikes, as will occur when a Community Participant uses batch processing to send messages, you will need sufficient Receiver instances to handle the maximum number of messages in that spike. Note that Receivers are generally four to five times faster than Document Managers.

- **Latency** The amount of time it takes for a document to get from one point to another. Things that can increase latency include the means of transmission, the size of the document, and Document Manager processing. You can reduce latency by scaling up the number of Document Managers. However, you can also decide to accept increased latency for things like batch processes that occur at the end of the business day. For example, if you know that you will receive batch processes between 3:00 p.m. and 5:00 p.m. You can either decide to handle all of that data quickly by implementing more Document Managers or you can decide that there will be an increase in latency during that time while your Document Managers work through the queued messages.

As these factors change, you can scale Business Integration Connect by adding multiple instances of its components. The Receiver, Community Console, and Document Manager instances can live anywhere independently. However, there are some things to consider when creating redundant Business Integration Connect components:

- When you create multiple Document Managers, all instances must communicate with the same WebSphere MQ queue manager and point to the same database instance.
- When you create multiple Community Consoles and Receivers, because these components accept connections from the Internet, the network must have a load balancer.

Note that as you scale Business Integration Connect, you must also scale the supporting infrastructure, such as WebSphere MQ and your RDBMS.

Once you have configured your servers, it is important to monitor your system performance to determine when and if additional servers are required to meet demands.

Data storage

Data storage is a key component in your topology as it is a Business Integration Connect prerequisite. How you address the shared storage requirement depends on your storage needs and the answers to the following questions:

- How long are you required to store data? Are there specific data retention requirements for your industry?
- Do you need highly available data storage?
- Do you need mission critical redundancy?

If your requirements are low in these areas, you can consider implementing your shared storage on the same server as one or more of the Business Integration Connect components. If not, it should be on a separate server from Business Integration Connect. When high availability is a requirement, consider a redundant NAS product because it can scale independently from the servers. Note that your RDBMS and WebSphere MQ do not have to be on NAS.

Security

Business Integration Connect will work within a standard secure environment. However, you should consider the following things:

- Even though Business Integration Connect does not explicitly support proxy servers, it is possible to use an independent reverse proxy server on inbound Internet connections. Business Integration Connect can use proxy servers to the Internet as long as those servers do not interfere with the SSL connection. This is because Business Integration Connect uses the initial SSL connection to obtain information critical for making a connection.
- Business Integration Connect is adversely impacted by anti-virus or firewall software that checks documents as they enter your system. To optimize performance, consider disabling this type of checking on Business Integration Connect servers.

The Community Console requires that sticky sessions be enabled if you are using a load balancer. Note that enabling sticky sessions in a small community that sends many documents may impact scaling by adding Receiver instances.

Topologies

This section describes some of the topologies (deployment configurations) to consider before you install Business Integration Connect and its prerequisite software. The topology that you choose should be based on the factors described in Environment planning. The topologies described in this section are consolidated topology, split topology, and distributed topology.

Consolidated topology

This topology is the simplest one. It consists of a single server running all three Business Integration Connect components (Receiver, Community Console, and Document Manager). You might also put WebSphere MQ and your RDBMS on the server as well, although these products should be on separate dedicated servers.

Split topology

The split topology consists of a front-end server containing the Receiver and Community Console components and a back-end server containing the Document Manager component. This topology is an entry level topology for a small production environment and maximizes your software investment. Note that WebSphere MQ and RDBMS can be anywhere, including on these servers. A better implementation is to have them on dedicated servers.

In a split topology (front-end servers and back-end servers), all instances of the three Business Integration Connect components need to communicate with the same shared file system. If high volume or high availability is not a concern, hosting the storage on the back-end server is an inexpensive solution. Back-end is preferable to front-end due to performance and security concerns. When this solution is used, the front-end server can use an NFS connection to share files with the back-end.

Distributed topology

If you have a large installation and want a highly scalable and highly redundant environment, you will probably create a distributed topology. This topology consists of one or more dedicated servers for each Business Integration Connect component (Receiver, Community Console, and Document Manager). For example, you can have an environment that requires two Receiver servers for redundancy, four Community Console servers to support a large number of Community Console users, and six Document Managers for document processing. You can scale this topology by adding additional

servers for the component that needs to handle a higher level of document processing (Document Manager), users (Community Consoles), or connections (Receivers) as needed.

In a distributed topology, an external NAS device is a good solution to shared storage. That will give the environment a high performance, redundant storage device that is independent of any of the other servers. All servers can make an NFS connection to the external device. Your RDBMS and WebSphere MQ should be on dedicated servers and their data storage does not have to be on NAS devices.

Best practice design

Once you have decided on a topology, you should consider how to implement the topology to provide redundancy and disaster recovery capabilities. The Pod-based design is a recommended design. In this design, you have a primary production pod. This pod contains all of the Business Integration Connect components required to handle a production load. There is a secondary production pod, which can also handle the production load, and a load balancer to switch between the two. The secondary production pod provides redundancy. The following diagram shows how you could implement the two pods:

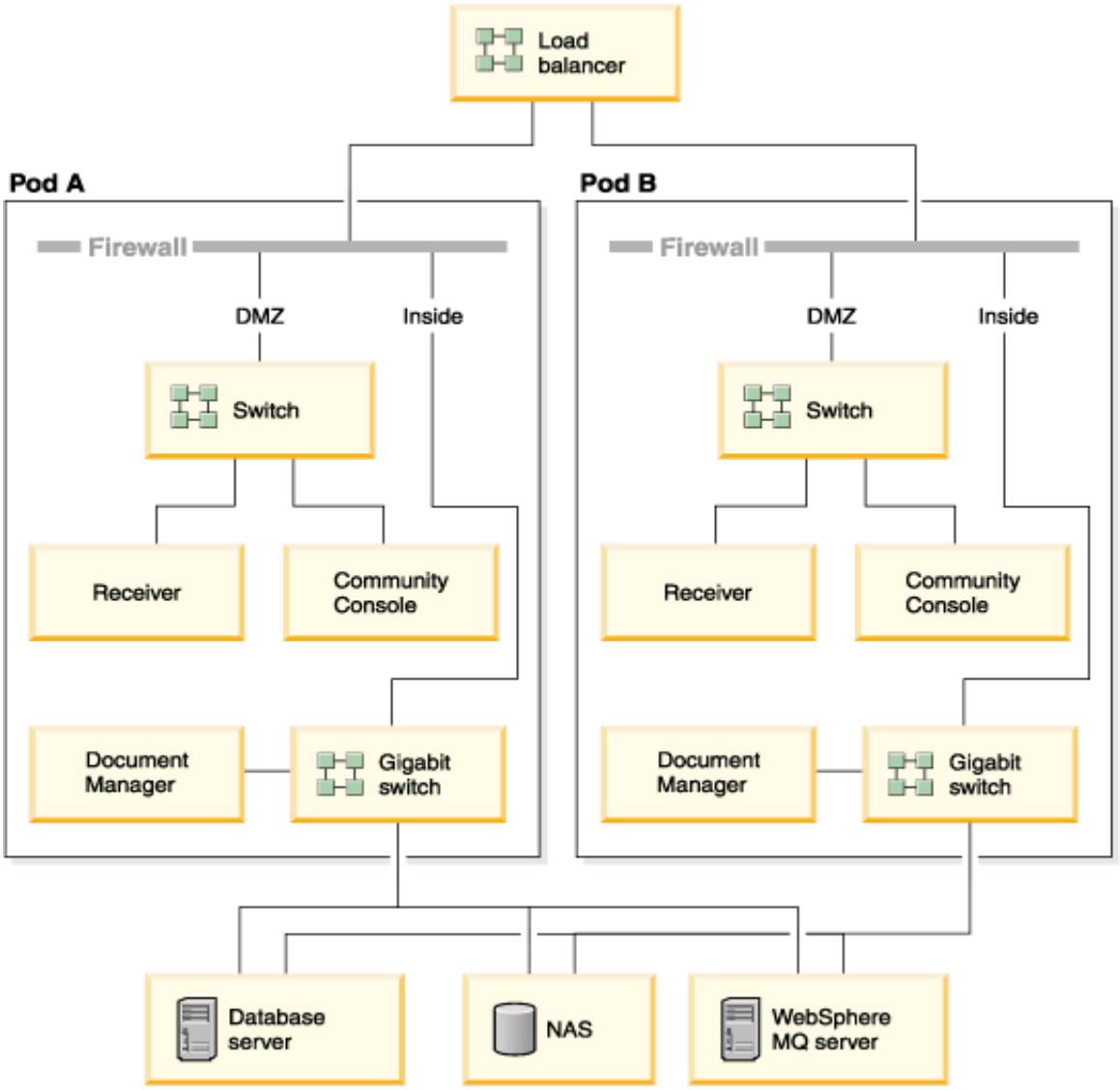

Figure 1-1. Pod-based topology

Another pod capable of handling the production load could be located at your disaster recovery site. The front end components of all three pods should be identical. However, the back-end components for the disaster recovery pod must be separate from the production components. Therefore, a separate database server, WebSphere MQ server, and shared file system are required. Note that you would need to implement some form of data synchronization between the production and disaster recovery back-end components. Note that Business Integration Connect only supports a single active production environment at any given time. You can also add a test pod, which can be a minimum implementation such as the consolidated topology.

Chapter 2. Installing Business Integration Connect on Linux, Solaris, or AIX

The following procedures describe how to install Business Integration Connect on either a Linux, Solaris, or an AIX system. In addition, this chapter details how to upgrade a previous version of Business Integration Connect. This chapter also details starting Business Integration Connect for the first time, testing the installation, and troubleshooting. Finally, this chapter details how to uninstall Business Integration Connect.

Procedures in this chapter are specific to UNIX. Paths may vary slightly for AIX and Solaris environments.

This chapter contains the following sections:

Installation overview

This section provides a high-level view of the Business Integration Connect installation process.

The following tasks are described in detail in this guide:

1. Confirm that your system meets the minimum hardware and software installation prerequisites.
2. Create and configure the Business Integration Connect database tables.
3. Install the Business Integration Connect software.

Verifying and configuring installation prerequisites

Before you install Business Integration Connect, ensure that you have all the necessary prerequisites. The topics in this section give you a brief overview of the system hardware and software requirements, the supported databases, and the user accounts required to run Business Integration Connect software.

Pre-installation checklists are included at the end of this section to help prepare for the installation. This table lists the tasks that must be performed before you install Business Integration Connect. Use this checklist to make sure that the server is ready to install Business Integration Connect.

- Table 1 lists information required by the Database Loader installation wizard. This table lists the values that you must enter when you run the Database Loader Installation wizard. When you are planning your installation, you can record required installation information in this table. For example, the database instance name and tablespace information.
- Table 2 lists information required by the Business Integration Connect installation wizard. This table lists the values that you must enter when you run the Business Integration Connect Installation wizard. As you plan your installation, you can record required installation information such as the host name of the WebSphere MQ server and port numbers for the Community Console, Receiver, and Document Manager.

This section contains the following topics:

Adding user accounts

Business Integration Connect requires a set of operating system users to connect with the database. The following procedure uses default names but you can substitute your own user and group names. Note that if you use your own group and user names, they cannot exceed eight characters.

If you are installing Business Integration Connect on multiple machines, the group's ID (GID) and the user's ID (UID) on the target machine must match the group GIDs and user UIDs on all of the other machines.

The following procedure assumes that all Business Integration Connect features and components are being installed on one machine.

To create user accounts:

1. Create the group to contain the Business Integration Connect users. For example, bcggroup.

   Business Integration uses a user in this group to manage Business Integration Connect components.

2. Create users.

Business Integration Connect uses this user to manage Business Integration Connect components. The installation wizard installs and runs software as this user. This is a normal user, not a super user. For example, bcguser.

3. If you are using DB2, add the appropriate user for each component you are going to install on this server.

   Community Console, for example, bcgcon.

   Document Manager, for example, bcgdoc.

   Receiver, for example, bcgrecv.

   Add the following users to bcggroup: bcguser, bcgcon, bcgdoc, and bcgrecv.

4. Record the user names and passwords in the tables in "Pre-installation checklist tables" on page 24.

Configuring WebSphere MQ

The following procedure describes how to configure WebSphere MQ after it is installed. See "Platform, hardware, and software requirements" on page 9 for a list of SupportPacs and updates that must be applied. For information on specific commands used in this procedure, see the WebSphere MQ documentation.

To configure WebSphere MQ:

1. Enter the following command to change the user to mqm:

   ```
   su - mqm
   ```

2. Create the queue manager by entering the following:

   ```
   crtmqm -q bcg.queue.manager
   ```

Update the channel parameters in the queue manager configuration file: *WebSphereMQHome*`/mqm/qmgrs/bcg/qm.ini` by adding the following lines to the bottom of the file:

```
Channels:

     MaxChannels=1000

     MaxActiveChannels=1000
```

Enter an empty line below `MaxActiveChannels=1000` and save the changes to the configuration file.

3. If the computer has more than one CPU, enter the following command:

   ```
   setmqcap <number of CPUs>
   ```

4. Start the queue manager with the following command:

   ```
   strmqm bcg.queue.manager
   ```

5. Start the listener with the following command:

   ```
   runmqlsr -t tcp -p 9999 -m bcg.queue.manager &
   ```

6. Wait about 10 seconds and press Enter to return the command prompt.

7. Start the JMS Broker (the publish-subscribe broker):

```
strmqbrk -m bcg.queue.manager
```

8. Start the MQ command services with the following command:

```
strmqcsv bcg.queue.manager
```

9. Use the `Tools/MQSeries/create_wbic_queues.mqsc` file to define the queues and channels for the queue manager:

```
runmqsc bcg.queue.manager <
 <CD image>/Tools/MQSeries/create_wbic_queues.mqsc
```

   Where *<CD image>* is the mount location of Business Integration Connect installation CD or the location of the uninstalled Business Integration Connect installation files.

10. Use the *WebShereMQHome*`/mqm/java/bin/MQJMS_PSQ.mqsc` file to configure the JMS publish and subscribe queues:

```
runmqsc bcg.queue.manager <
      MQHomeInstallDir/mqm/java/bin/MQJMS_PSQ.mqsc
```

11. Record the MQ host name, queue manager name, and listener port in "Pre-installation checklist tables" on page 24.

Installing and configuring DB2

The Business Integration Connect database should reside on a dedicated server. If you are creating the server, use the following procedure to install and set up DB2.

When installing WebSphere Business Integration Connect, you can use the `Create_db2.sql` script to create and configure the database. The database is configured with the assumption that DB2 UDB is running on a multi-processor machine. In particular the `DFT_DEGREE` parameter is set to 4 which indicates that a SQL query is executed as 4 sub-processes running in parallel. If you are running DB2 UDB on a single processor machine, this configuration is not optimal and might cause a system memory and CPU conflict. We recommend that you review the database configuration with your database administration and modify it if necessary to conform to your specific database environment.

If you are modifying an existing DB2 installation, refer to "Modifying an existing DB2 installation" on page 23.

NOTE: Business Integration Connect does not use the fenced-user option. Do not use the fenced-user ID as part of the Business Integration Connect Installation.

---

1. Install DB2 by following the installation instructions for DB2 and using the DB2 Setup wizard. Refer to the DB2 documentation for specific DB2 installation instructions. In the wizard, do the following:
   - When you come to the panel in which you select the type of installation, select a Custom install. In the following panel, add Application Development Toolkit to the default selections.
   - For the remaining panels, use the default values or your own values. Note the instance name, instance owner userid, and password, and record them in the Information required by the Database Loader Installation wizard table later in this section.
2. When you have completed the DB2 installation, install the FixPack2 using the instructions in the `FixPackReadme.txt` file.
3. If DB2 is not running, start it by running the following command:

   ```
   db2start
   ```

NOTE: C++ compiler system environment variables must be exported to properly execute SQL and create the stored procedures.

---

4. Verify that the correct C++ compiler is installed. Refer to the DB2 Application Development Toolkit documentation for the required package names, and versions.

Modifying an existing DB2 installation

If you are using an existing installation, do the following:

1. Verify that the DB2 Application Development Toolkit is installed. For information on how to install the toolkit, see the DB2 documentation.
2. Check for header files in *`DB2Home`*`/IBM/db2/V8.1/include` directory.
3. Verify that the correct C++ compiler is installed. Refer to the DB2 Application Development Toolkit documentation for the required package names, versions, and so on.

For quick reference, record the names and passwords in the tables in "Pre-installation checklist tables" on page 24. Record the default values also, especially if the default values were changed.

Installing and configuring Oracle

This guide does not provide installation instructions for Oracle 9i. For procedures on how to install Oracle 9i, see the appropriate Oracle documentation.

IBM recommends that you follow the guidelines in this section during your Oracle installation:

1. Export Oracle system environment variables, as described in the Oracle installation documentation. This is required for the root/Administrator user if the Database Loader will run SQL automatically during the Business Integration Connect installation process.

2. The Oracle 9i JDBC driver must be available, either downloaded or copied to the machine or machines that will run the hub components. The JDBC driver must be the same level as the Oracle version that is installed.

Record the names and passwords in the tables in "Pre-installation checklist tables" on page 24. Record default values also, especially if the default values were changed.

Pre-installation checklist tables

The following table lists the tasks that must be performed before you install Business Integration Connect.

Task	✓
1. User group, bcggroup, exists in the operating system. Operating system user bcguser exists and is a member of bcggroup. If you are using DB2, operating system users bcgcon, bcgdoc and bcgrecv all exist and are members of bcggroup. If you are using Oracle, the operating system users bcgcon, bcgdoc & bcggrecv are not required.	
2. DB2 or Oracle is installed and configured on a server.	
3. WebSphere MQ is installed and configured on a server.	
4. A SMTP server exists.(optional)	
5. If you plan to use a multiple computer topology, make sure that shared network storage (ex: NAS, NFS) is installed and configured on each computer.	

When you have completed all of the above tasks, you are ready to install Business Integration Connect.

The following table identifies information that you must have before you start the Database Loader wizard. Consult the table as you run the Database Loader wizard.

Information required before starting the Database Loader wizard

Required Information	Value
Business Integration Connect user name	(bcguser is the default)
Business Integration Connect user password	
Business Integration Connect group name	(bcggroup is the default)
Community Console user name	(bcgcon is the default)
Community Console user password	
Document Manager user name	(bcgdoc is the default)
Document Manager user password	
Receiver user name	(bcgrecv is the default)
Receiver user password	

The following table identifies information that you must have before you start the Business Integration Connect installation wizard. Consult the table as you run the installation wizard.

Information required before starting the Business Integration Connect installation wizard

Required Information	Value
WebSphere MQ host name	
WebSphere MQ Queue Manager	(bcg.queue.manager is the default)
WebSphere MQ port for Listener	9999
Mount Point for Shared Location	
Database host name	
Database port	default is (DB2=50000 if using default Instance). (Oracle=1521)
Database owner (DB2)	
Owner's password (DB2)	
Database name (DB2)	
Instance name (DB2)	
Administrator login ID (Oracle)	
Administrator password (Oracle)	
Oracle SID (Oracle)	
Schema owner login (Oracle)	
Schema owner password (Oracle)	
Business Integration Connect user name	(bcguser is the default)
Business Integration Connect user password	

Information required before starting the Business Integration Connect installation wizard

Required Information	Value
Business Integration Connect group name	(bcggroup is the default)
Community Console user name	(bcgcon is the default)
Community Console user password	
Receiver user name	(bcgrecv is the default)
Receiver user password	
Document Manager user name	(bcgdoc is the default)
Document Manager user password	
SMTP host name	
SMTP Port Number	(25 is the default)

Installing Business Integration Connect

When you have met all of the prerequisites noted in previous sections, you are ready to run the Database Loader and WebSphere Business Integration Connect installation wizards.

Setting up the database

Business Integration Connect includes an installation wizard to set up the database tables. This wizard, Database Loader, gathers information to create and populate the tables for you. Alternatively, it can save the SQL files it uses to create the tables. You can then use the SQL files to create and populate the tables on your own.

Before you begin, verify that your RDBMS server is installed, configured correctly, and running.

The following procedure describes how to configure the database using the Database Loader GUI. You can also install the Database Loader without using the GUI. See "Installing the components using the command line" on page 46 for information.

To set up the database tables:

1. Log in as the root administrator.

NOTE: Database Loader requires root/Administrator privilege to automatically run the SQL create/change ownership of the tablespaces directories. Only root can change the owner of a file.

2. From the Database Loader directory, run the setup executable specific to your platform:

   ```
   cd DBLoader
   ```

Table 1: Platform-specific executables for Installer

Platform	Executable
Linux	`setupLinux`
AIX	`setAIX`
Solaris	`setupSunOS`

   The Database Loader wizard starts and displays the Welcome panel. Click **Next**.

3. In the Software License Agreement panel, read the Software License Agreement. If you agree to the terms in the agreement, select **I accept the terms of the license agreement**. Click **Next**.

4. In the Directory Name panel, type the path and directory name of the directory that the Database Loader will use when it sets up the database.

   Select a location with enough space for your database and all the application data that will be stored in it.

   Click **Next.**

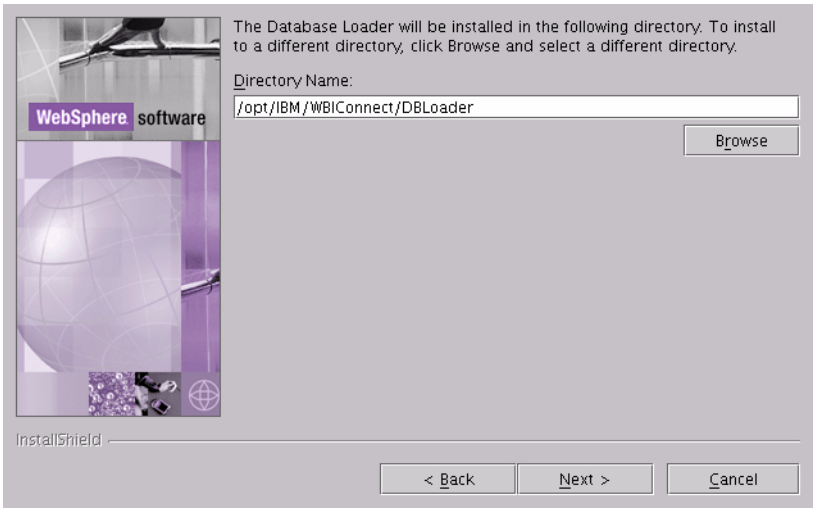

Figure 2-1. The Directory Name panel

5. In the Database Type Selection panel, select the database server you plan to use for Business Integration Connect. Click **Next**.

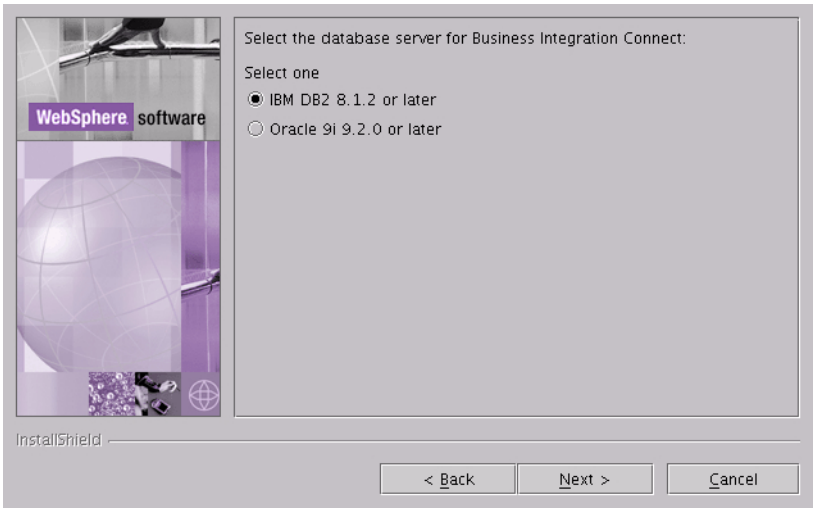

Figure 2-2. Database Type Selection panel

6. In the Database Information panel, type the following database information, then click **Next** when you are finished:

For DB2:

- Database name
- Instance name
- Group name
- Owner name
- Owner password

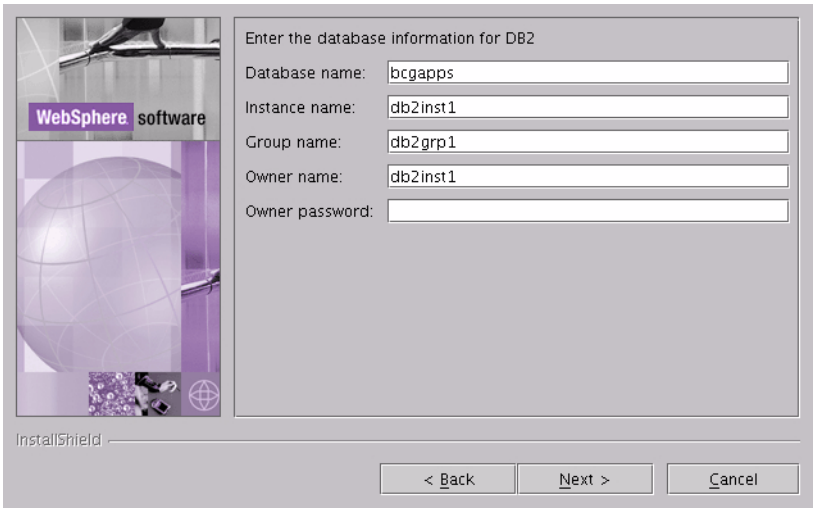

Figure 2-3. DB2 Database Information panel

For Oracle:

- Administrator login ID
- Administrator password
- Oracle SID
- Schema owner login
- Schema owner password

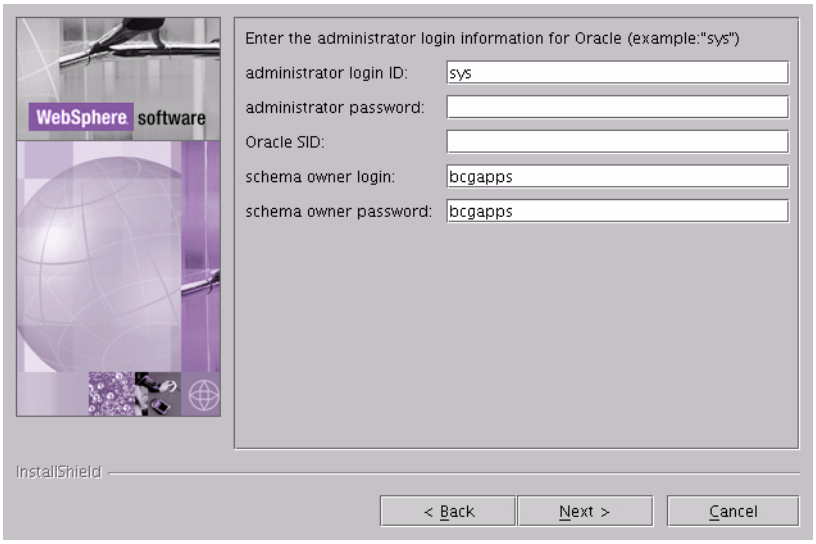

Figure 2-4. Oracle Database Information panel

7. In the Database Location panel, type the full path for the location of the database and each of its tablespaces on the database server. For example the DB2 database directory path might look like the this: *DB2Home/IBM/WBIConnect/DBLoader/tables*.

NOTE: If any of these values are changed, they must exist before executing the SQL files. If they do not exist, then they must be created manually.

Once you have entered the required information, click **Next**.

For DB2:

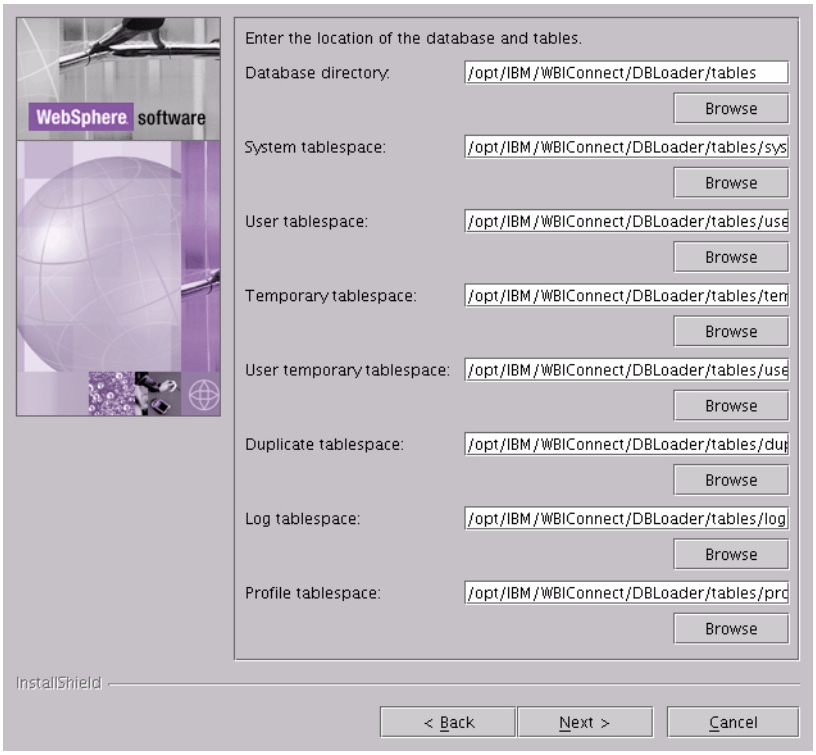

Figure 2-5. DB2 Database Location panel

For Oracle:

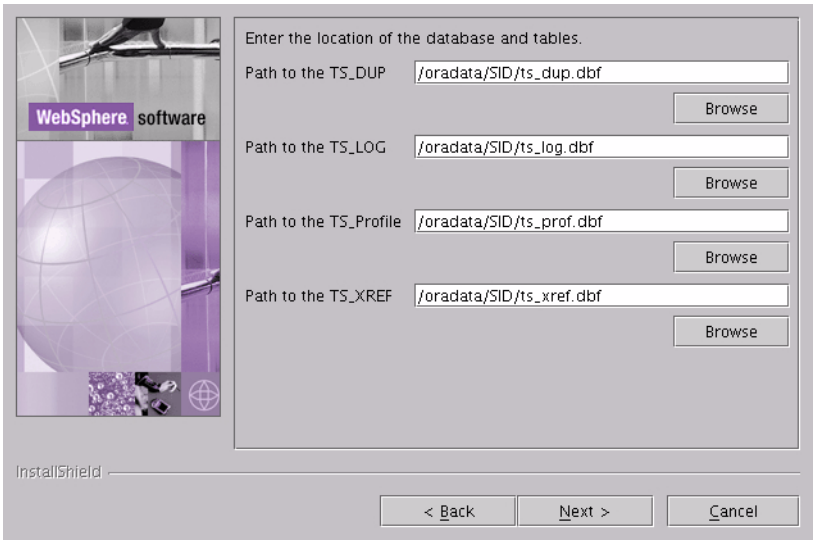

Figure 2-6. Oracle Database Location panel

8. In the Component Configuration panel, type the login information for the Business Integration Connect components and the location of the common shared files. Click **Next** when you are finished.

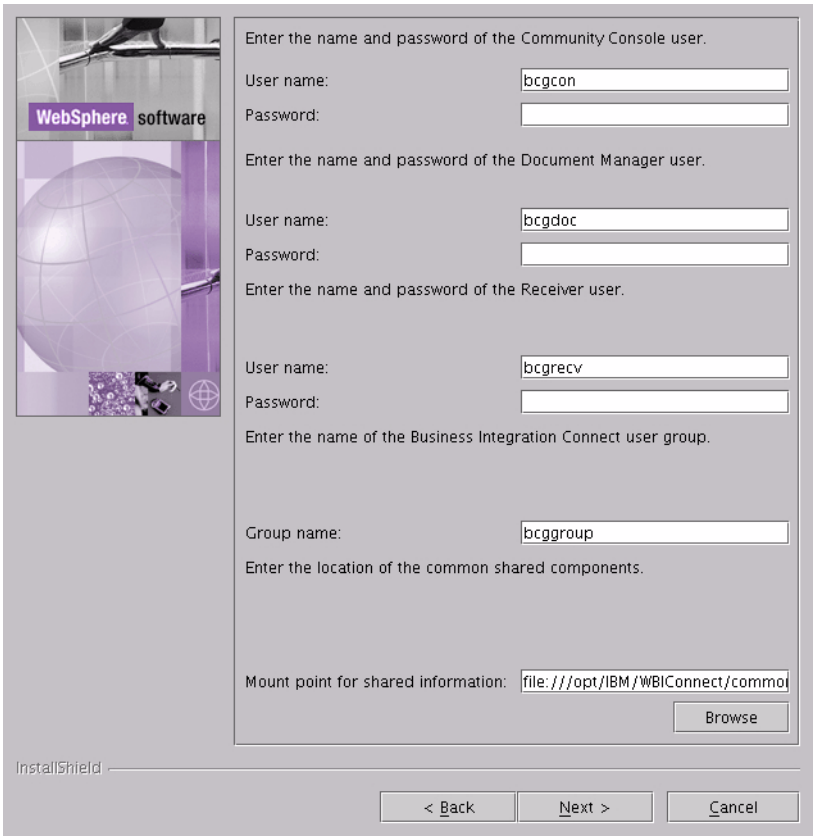

Figure 2-7. Component Configuration panel

In the **User name** and **Password** text boxes for the Community Console, Document Manager and Receiver, type the name and password of the user for each component. These users were created when the server was configured.

In the **Group Name** text box, type the name of the group that contains the Business Integration Connect users.

In the **Mount point for shared information** text box, type the location of the common shared files used by the main components of Business Integration Connect. Record the Mount point in the table in the beginning of the Business Integration Connect installation procedure. See "Installing the components using the install wizard" on page 36.

9. The system displays the Summary panel. Review the information on the Summary panel, which identifies where the Database Loader will be installed. If this location is incorrect, click **Back** to return to previous panels. When the information on the summary panel is correct, click **Next**.

10. The wizard displays a panel where you can select whether the Database Loader just creates the SQL files or creates the SQL files and then runs them. The default behavior is for the Database Loader to just create the SQL files.

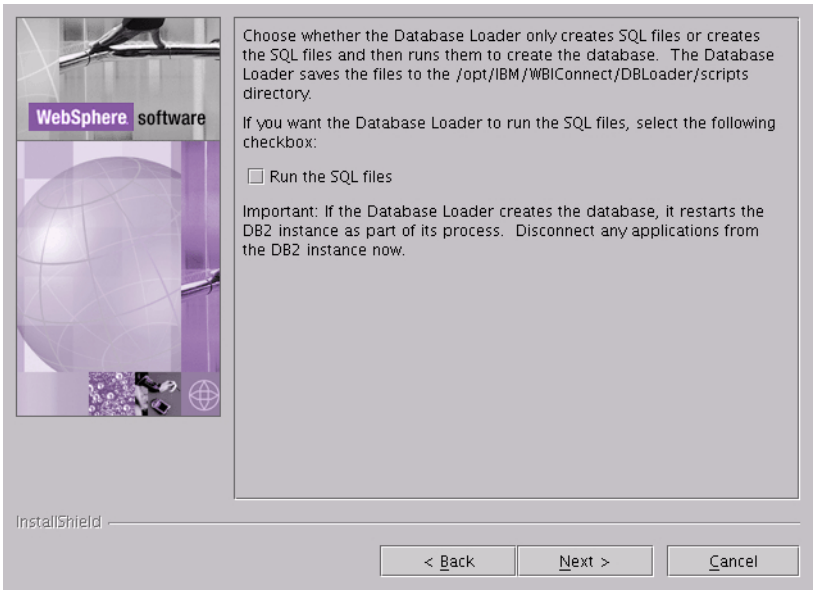

Figure 2-8. Run the SQL Files panel

When the Database Loader runs the SQL files, it does the following:

- Creates the tablespaces
- Creates the schema
- Creates the tables, views, sequences, procedures, and functions, then populates them with metadata
- Assigns permissions to the tables
- Compiles the stored procedures

Because the Database Loader restarts the DB2 instance as part of its routine, disconnect any applications that are using the DB2 instance where you are setting up the Business Integration Connect database.

If you want the Database Loader to run the files for you, check the **Run the SQL files** check box.

Click **Next** when you are finished.

11. Click **Finish** when the Finish button is enabled.
12. If you are running the SQL manually, refer to the `Instructions.txt` file in the SQL directory (installed by the Database Loader installation wizard) for more information.
13. Confirm that the database was created successfully by doing the following SQL query in a command line:

For DB2:

a. Switch to the database owner (db2inst1 if the default was used):

```
su - db2inst1
```

b. Enter the DB2 interactive mode:

```
db2
```

c. Connect to the database as one of the Business Integration Connect component users:

connect to bcgapps user bcgcon using *<password>*

Where *<password>* is the password for the bcgcon user.

d. Count the number of stored procedures:

Select count(*) from syscat.procedures where procschema='DB2INST1'

The command should return 384. If it does not, see "Troubleshooting" on page 54.

e. Repeat steps c and d for the bcgdoc user and the bcgrecv user. They should also return 384 stored procedures.

f. To exit the DB2 interactive mode, type the following:

```
quit
```

NOTE: You can also review the logs created in systemtemp directory/WBIConnect/logs.

For Oracle:

a. Confirm that the database was created successfully by typing the following SQL query in a command line:

```
su  -  <oracle owner>
```

b. Log into sqlplus as each of the defined users: bcgapps, bcgcon, bcgrecv, bcgdoc. For example:

```
sqlplus bcgapps/<pw for bcgapps>
```

Where *<pw for bcgapps>* is the password entered for bcgapps during execution of the Database Loader.

c. Quit from sqlplus shell.

When you have set up the Business Integration Connect database, you are ready to install the Business Integration Connect components.

The following section describes how to install the components using the InstallShield wizard GUI. You can also install the components without using the GUI. See "Installing the components using the command line" on page 46 for information.

Installing the components using the install wizard

Business Integration Connect has three main components: Community Console, Receiver, and Document Manager. All three components share common content. You can install the components and common content on a single server, install each component on a separate server, or use a combination of these two options. The only restriction is that you must install one instance of each component on at least one server. See "Environment planning" on page 13 and "Topologies" on page 15 for information on how to plan the placement of the various components on different servers.

Before you begin, make sure that the machine where you are installing one or more of the components has the prerequisite software installed and configured properly. Consult the Requirements for all Business Integration Connect servers table in "Platform, hardware, and software requirements" on page 9 for software prerequisites and "Installation overview" on page 19 for information on how to configure that software. You must also have the Business Integration Connect database set up. For information on this, see "Setting up the database" on page 27. Finally, your database server and WebSphere MQ must be running.

Common components need to be installed only once when using anything other than the consolidated topology.

NOTE: If you are using a Linux platform, follow these steps to prevent memory leaks: a.) Change the max semaphores kernel parameter from 32000 to 256000 on the database server. b.) Upgrade the linux kernel to at least 2.4.9-e.27.

To install Business Integration Connect:

1. Log in as root.

   The Hub installer requires root/Administrator privilege to integrate with the native software registry.

2. In the hub directory, run the setup executable specific to your platform.

   ```
   cd hub
   ```

Table 2: Platform-specific executables for Installer

Platform	Executable
Linux	`setupLinux`
AIX	`setAIX`
Solaris	`setupSunOS`

   The wizard starts and displays the Welcome panel. Click **Next**.

3. In the Software License Agreement panel, read the license agreement. If you agree to its terms, click **I accept the terms of the license agreement**. Click **Next**.

4. In the Directory Name panel, type the path and name of the directory that the wizard uses when it installs Business Integration Connect. Click **Next**.

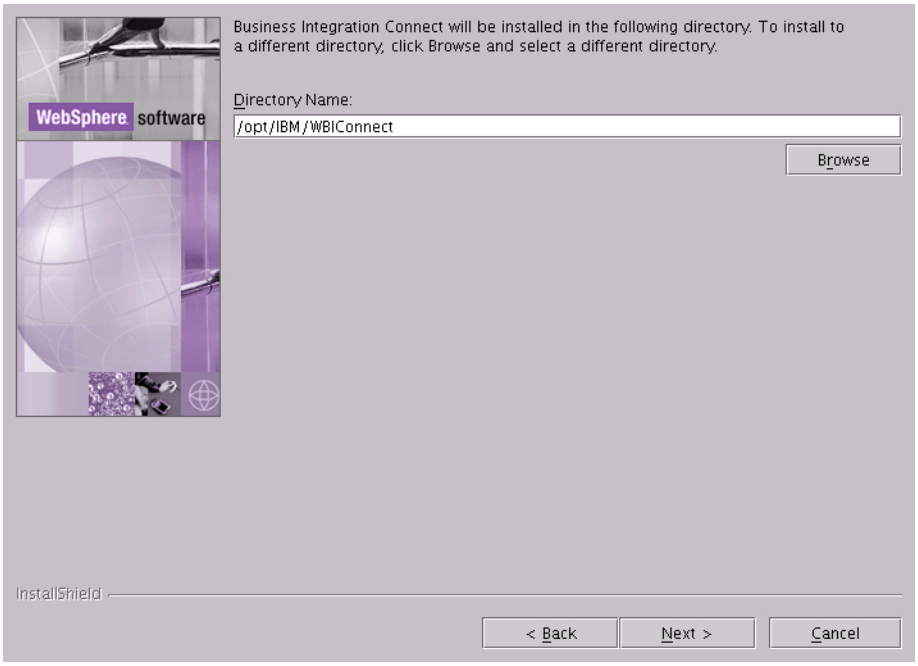

Figure 2-9. Directory Name panel

5. In the Component Selection panel, select the components you want to install on the server. You can select multiple components.

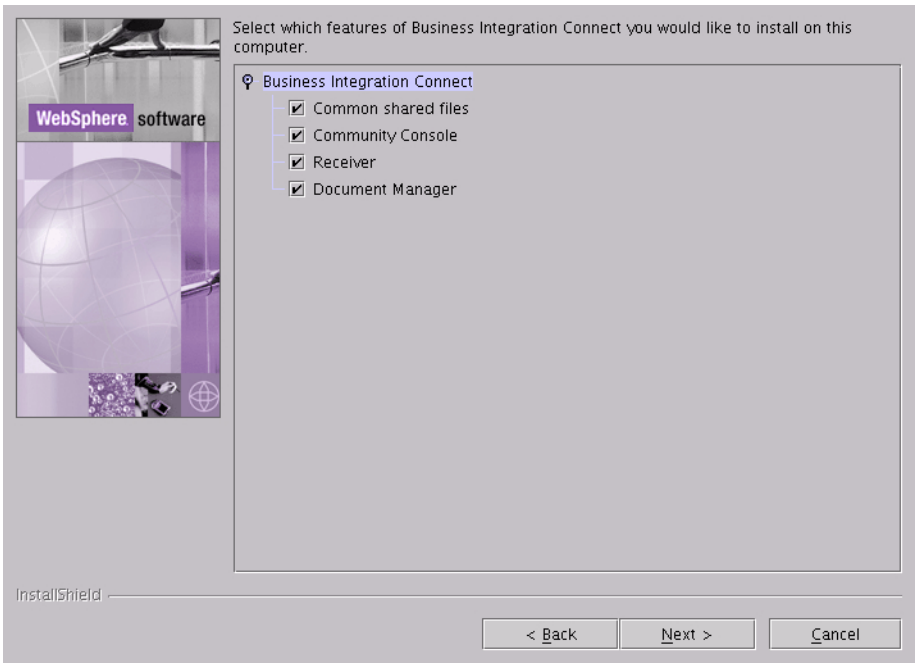

Figure 2-10. Component Selection panel

The rest of this procedure assumes that you are installing all of the components on this server. If you are not installing all of them, some of the panels described in the rest of this procedure will not appear. Click **Next**.

6. In the User Information panel, type the name, password, and user group of the Business Integration Connect user. The user and user group were created when the server was configured.

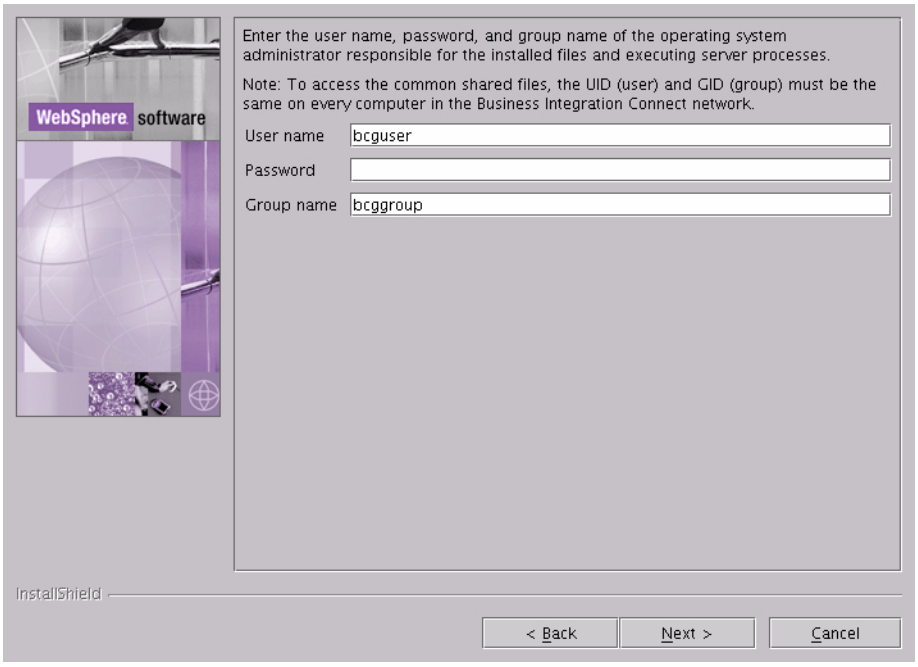

Figure 2-11. User Information panel

7. In the WebSphere MQ Server panel, enter the host name of the computer running WebSphere MQ if it is not installed on this computer. Make sure to change the name of the queue manager if the default name was not used.

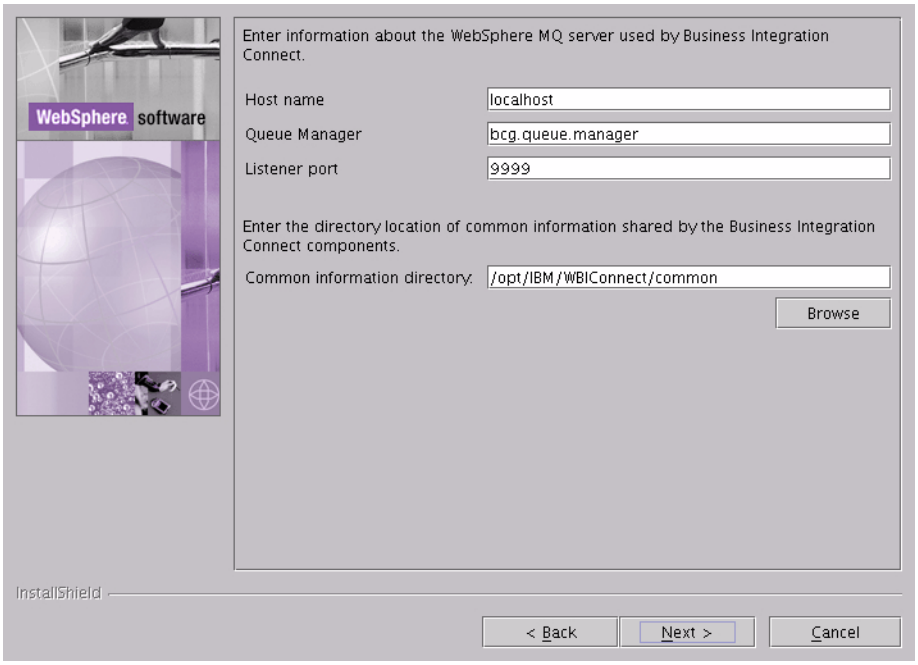

Figure 2-12. WebSphere MQ Server panel

In the **Host name** text box, if WebSphere MQ is not on the current machine, replace `localhost` with the name of the system containing WebSphere MQ.

In the **Queue Manager** text box, replace the default name with the name that was used when configuring WebSphere MQ (See Step 2 in "Configuring WebSphere MQ" on page 21).

In the **Listener Port** text box, type the port that the listener is using (see "Configuring WebSphere MQ" on page 21).

In the **Common information directory** text box, type the location of the common shared components. This value must match the Mount point location used in the Database Loader installation.

Click **Next**.

8. Select the database server.You can select either **IBM DB2 8.1.2 or later** or **Oracle 9i 9.2.0 or later**.

   Click **Next**.

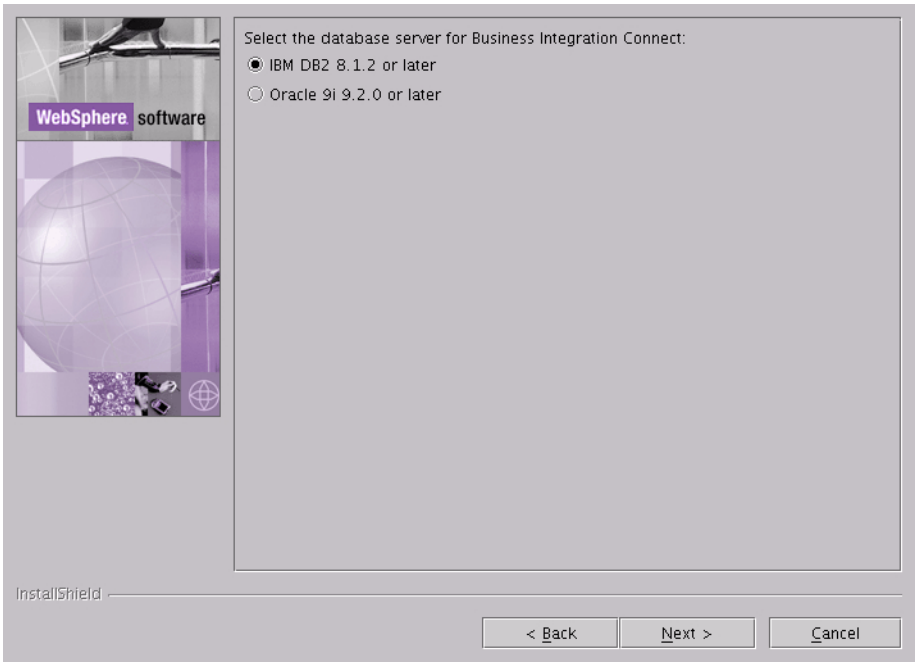

Figure 2-13. Database Server Selection panel

9. The Database information panel appears. If you selected DB2 as your Database server, follow the DB2 specific instructions in this procedure. If you selected Oracle as your Database server, follow the Oracle specific instructions in this procedure.

   DB2:

   Enter the **host name** of the computer running DB2 if it is not installed on the current system by replacing `localhost` with the name of the system containing DB2.

   In the **Port** text field, type the port number that the DB2 instance is using. To find out which port the DB2 instance is using either use the DB2 Control Center (GUI) to determine the properties or type the following DB2 configuration command into a command prompt: `db2 get dbm cfg`. This DB2 configuration information is also saved by the Database Loader in the `system temp/WBIConnect/logs` directory. The default port is 50000.

   In the **User name**, **Password**, **Database name**, and Instance name text fields, type the owner name, owner's password, database name and the instance name respectively. These are the names used in the Database Loader installation to define the database. See "Setting up the database" on page 27. Note that for the instance name, the value you enter must be all uppercase characters.

   Click **Next**.

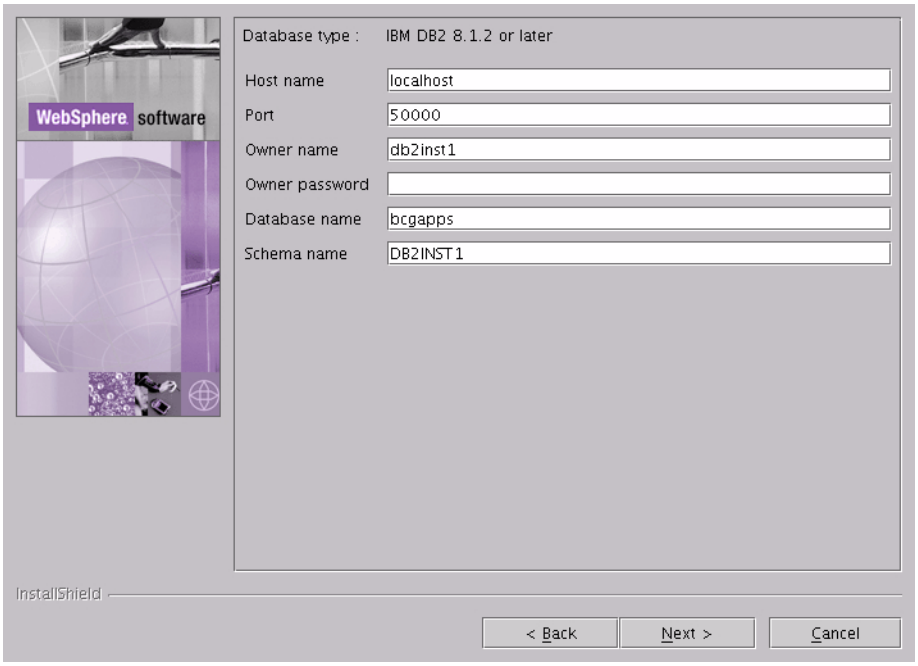

Figure 2-14. DB2 Database Information panel

Oracle Users:

If you selected Oracle, the Database information panel appears. Enter the required information about the Oracle database.

The full path and name of the JDBC driver must point to the correct version of the driver on this computer. The driver can be found in the Oracle 9i installation directory. It can be downloaded from `http://otn.oracle.com/software/tech/java/sqlj-jdbc/index.html`. In the section JDBC Driver Downloads, click on Oracle 9i Release 2 drivers. Be sure to select the driver version that matches the Oracle 9i (9.2.0) service version that you are running.

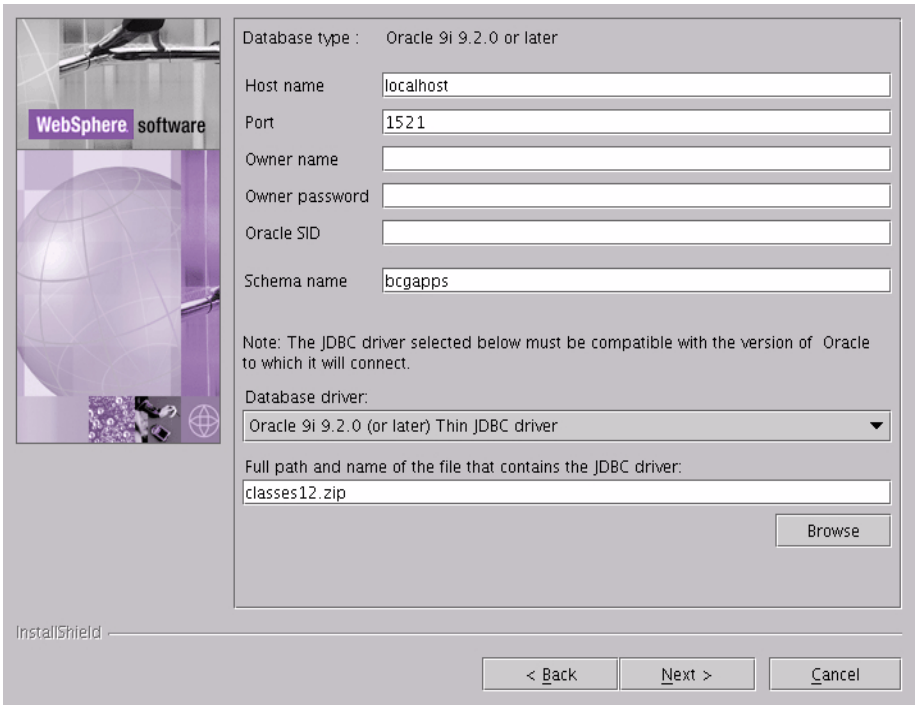

Figure 2-15. Oracle Database Information panel

10. If you selected to install the Community Console, configure it using the Community Console configuration panel.

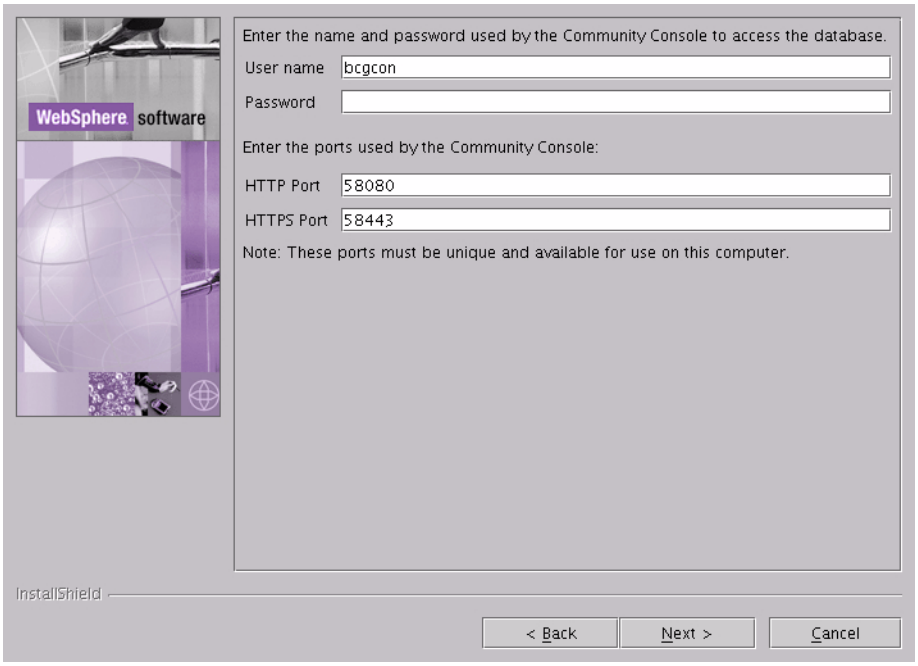

Figure 2-16. Community Console Configuration panel

In the **User name** text box, type the user ID that the Community Console component uses to log in to the database.

In the **Password** text box, type the password associated with the user name. Make sure that you enter the correct password because the Community Console will not function with an incorrect password.

In the **HTTP port** text box, type the name of the port on which the component listens for messages. The Community Console, Receiver, and Document Manager must have unique port numbers, and they must be available on this computer.

In the **HTTPS port** text box, enter the name of the secure port on which the component listens for messages. The Community Console, Receiver, and Document Manager must have unique port numbers, and they must be available on this computer.

Click **Next**.

11. If you selected the Receiver or Document Manager components, configure them using their configuration panels. These panels have the same fields as the Community Console Configuration panel. Note that all three components (Community Console, Receiver, and Document Manager) must have different HTTP and HTTPS ports.

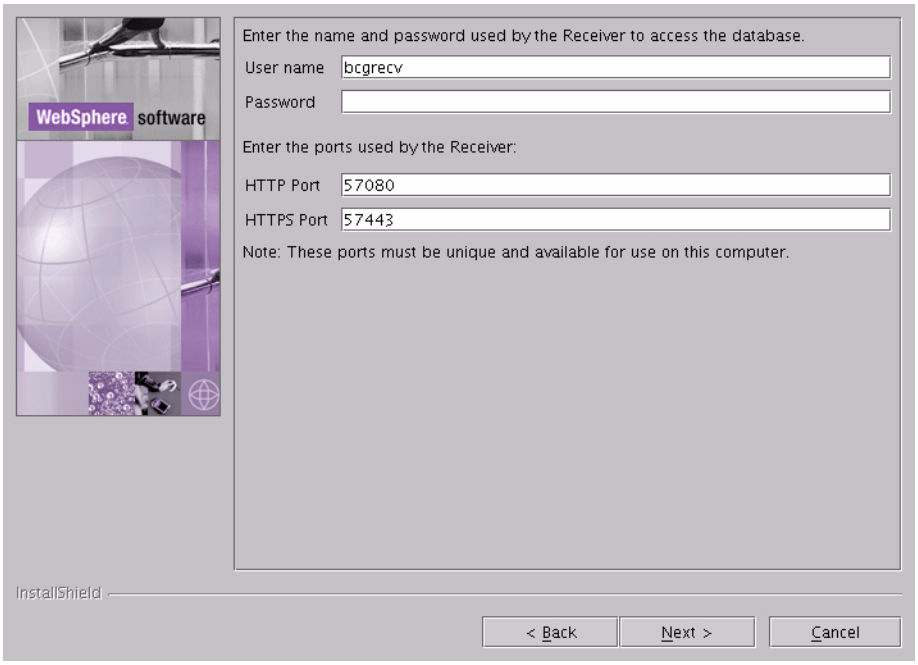

Figure 2-17. Receiver Configuration panel

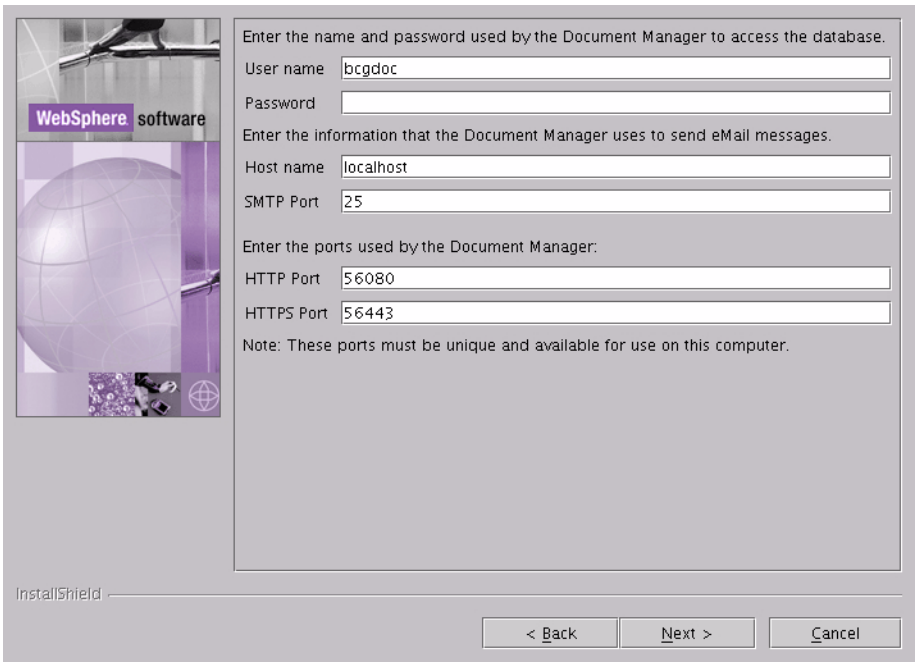

Figure 2-18. Document Manager Configuration panel

12. In the RosettaNet Configuration panel, type the Contact Information for RosettaNet messages. If you do not know the proper values, use the required default values. This information is required if you are using RosettaNet and is recommended for all installations.

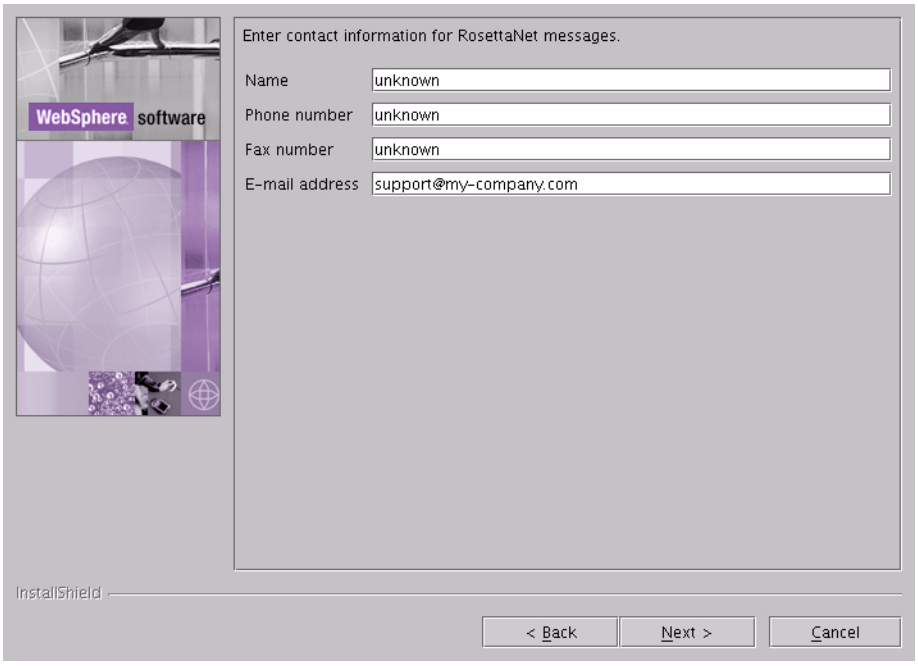

Figure 2-19. RosettaNet Configuration panel

In the **Name** text box, type the name of the person that should be contacted for RosettaNet problems.

In the **Phone number** and **Fax number** text boxes, type the telephone and fax numbers for the RosettaNet contact.

In the **E-mail address** text box, type the e-mail address for the RosettaNet contact person.

Click **Next**.

13. In the Alert Notification panel, configure Business Integration Connect so that it can send alerts by e-mail. These default values are required. Use them if you do not know the proper values.

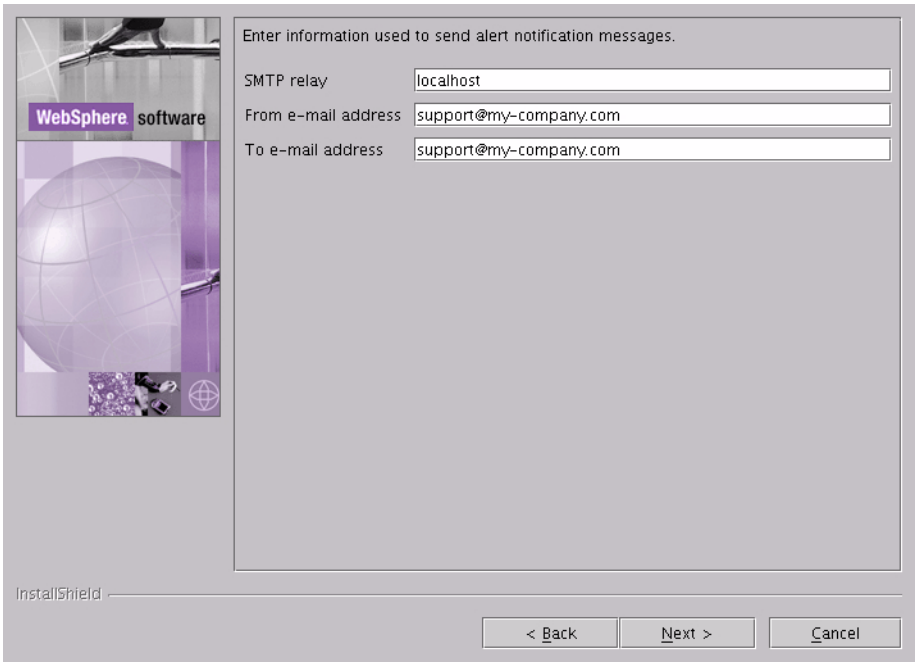

Figure 2-20. Alert Notification panel

In the **SMTP relay** text box, type the host name of the SMTP if it is not running on this computer.

In the **From e-mail address** text box, type the e-mail address Business Integration Connect uses to send e-mails.

In the **To e-mail address** text box, type the destination e-mail address that users responding to Alert Notifications use when they send a response e-mail.

Click **Next**.

14. Review the information on this panel, which identifies the components that will be installed. If any of this information is incorrect, click **Back** to return to previous panels. When all of the information on the summary panel is correct, click **Next**.

15. The Business Integration Connect Installer installs and configures the selected components. When it has completed this task, the installer enables the Finish button. Click **Finish**.

Repeat this procedure on each server where you want to install Business Integration Connect components and the common content. The common content needs to be installed only once because it is available to all computers via the shared file system.

When you have installed all Business Integration Connect components, see "Upgrading Business Integration Connect" on page 48.

Installing the components using the command line

Business Integration Connect also provides a way to install the components using a command line. This feature requires an options file that provides values for all of the installation options. You can either modify the provided sample ISS files or perform an install using the GUI and record your choices to create a custom options file. The sample files for the Database Loader are in the Database Loader directory on the CD or in the unarchived install image, while the Business Integration Connect sample files are in the hub directory on the CD or in the unarchived install image.

Each option in the file appears on a separate line and is preceded by comments that describe the setting and present an example of the option. In the sample files, the option values are the default values presented in the GUI. Some settings, such as passwords and hostnames, require information about the local configuration.

You can also generate your own options file while running the install or uninstall program that you can then use to duplicate the install or uninstall. For information, see the next section "Performing a silent install" on page 47.

To install the Database Loader or Business Integration Connect using the command line:

1. Log in as root administrator.
2. Open a command line on the machine on which you want to install the code.
3. Navigate to the location of the installation executable. For example,

   ```
   cd DBLoader
   ```

   or

   ```
   cd hub
   ```

4. Enter the command below that is specific to your operating system:

   For Linux, enter:

   ```
   ./setupLinux -options "<options file name>"
   ```

   For AIX, enter:

   ```
   ./setupAIX -options "<options file name>"
   ```

   For Solaris, enter:

   ```
   ./setupSunOS -options "<options file name>"
   ```

Where <*options file name*> identifies the file that contains the option values the installer will use.

With this command, the installer displays all of the panels that appear in a normal GUI installation and all of the fields in the panels contain the values listed in the options file.

Performing a silent install

Database Loader and Business Integration Connect can be installed and uninstalled without either a GUI or user interaction. A silent installation is particularly useful when installing components with the same settings on multiple systems or when a graphical environment is not available.

To install the Database Loader or Business Integration Connect silently, follow these steps:

1. Log in as root administrator.
2. Open a command line on the machine on which you want to install the code.
3. Navigate to the location of the installation executable. For example:

   ```
   cd DBLoader
   ```

   or

   ```
   cd hub
   ```

4. Enter the command below that is specific to your platform:

   For Linux, enter:

   ```
   ./setupLinux -options "<options file name>" -silent
   ```

   For AIX, enter:

   ```
   ./setupAIX -options "<options file name>" -silent
   ```

   For Solaris, enter:

   ```
   ./setupSunOS -options "<options file name>" -silent
   ```

   Where <*options file name*> identifies the file that contains the option values the installer will use.

The installer runs without any user interaction or GUI. When the installation is complete, the installer returns to the command prompt.

Generating an options file

To generate an options file with settings specific to your installation, follow these steps:

1. Log in as root administrator.
2. Open a command line on the machine on which you want to install the code.
3. Navigate to the location of the installation executable.For example:

   ```
   cd DBLoader
   ```

   or

```
cd hub
```

4. Enter the command below specific to your platform:

   For Linux, enter:

   ```
   ./setupLinux -options-record "<options file name>"
   ```

   For AIX, enter:

   ```
   ./setupAIX -options-record "<options file name>"
   ```

   For Solaris, enter:

   ```
   ./setupSunOS -options-record "<options file name>"
   ```

   Where *<options file name>* identifies the file that contains the option values the installer will use.

The installer runs using the GUI. It installs the Database Loader or Business Integration Connect and places the given options file in the install directory (*ProductDir*/IBM/WBIConnect/DBLoader or *ProductDir*/IBM/WBIConnect/ if you used the default value). You can then edit this file with any text editor, or use it without changes to install the product again or create duplicate installs on other machines.

To generate just the options file without installing the product, replace the *-options-record* parameter with the *-options-template* command. This command creates the options file with all of the entries necessary to install the product, but each of these entries must be modified with your specific installation settings.

Upgrading Business Integration Connect

This upgrade procedure assumes the same environment will be used for version 4.2.1, including the same version 4.2.0 MQSeries queue manager configuration. It is also assumed that the upgrade is for the same Business Integration Connect Edition (for example, from Enterprise version 4.2.0 -> Enterprise version 4.2.1). This section only applies to Linux environments using DB2 as the database.

To upgrade to version 4.2.1, follow the procedures below:

1. Stop the receiver by entering the following command:

   ```
   {WBICV420 INSTALL DIR}/receiver/was/bin/shutdown_bcg.sh
   ```

   Check the console Document Viewer to verify that documents in progress have finished processing.

2. Stop the Document Manager by entering the following command:

   ```
   {WBICV420 INSTALL DIR}/router/was/bin/shutdown_bcg.sh
   ```

3. Stop the console by entering the following command.

   ```
   {WBICV420 INSTALL DIR}/console/was/bin/stopServer.sh server1
   ```

4. Back up the database. Refer to your database administrator or database documentation for information on how to do this.

5. Run the Business Integration Connect version 4.2.1 Database Loader installation program.

   ```
   CD_ROM/MEDIA DIR}/DBLoader/setupLinux
   ```

   Follow the guidelines below:

   a. Specify the same installation directory as Business Integration Connect version 4.2.0.

   b. Select IBM DB2 8.1.2 or later as the database server.

   c. Verify the configuration defaults and override as needed.

   d. If prompted that the JVM is being installed and will overwrite the contents of the directory, click **Yes**.

6. Review the following file:

   ```
   Run [DBLOADER INSTALL DIR]/scripts/DB2/Upgrade.sql
   ```

7. Run `DB2/Upgrade.sql` by entering the following commands in a command window:

   ```
   su - db2inst1
   ```

   ```
   cd   [DBLOADER INSTALL DIR]/scripts/DB2
   ```

   `db2start` (if the database is not started)

   `db2 connect to bcgapps` (where "bcgapps" is the database name)

   ```
   db2 -td! -f Upgrade.sql -z /tmp/Upgrade.log
   ```

8. Review the `/tmp/Upgrade.log` file for any errors.

NOTE: Any changes that were made to the 4.2.0 configuration files will need to be repeated on the new configuration files after you have installed 4.2.1.

---

9. Back up the version 4.2.0 installation directories before proceeding. Enter the following commands, replacing */tmp/* with any other location with the commands below:

   - `cp -R {WBICV420 INSTALL DIR}/console /tmp/WBIC-420/console`
   - `cp -R {WBICV420 INSTALL DIR}/receiver /tmp/WBIC-420/receiver`
   - `cp -R {WBICV420 INSTALL DIR}/router /tmp/WBIC-420/router`
   - `cp -R {WBICV420 INSTALL DIR}/common /tmp/WBIC-420/common`

10. As the root administrator, uninstall version 4.2.0 by entering the following command:

    ```
    {WBICV420 INSTALL DIR}/_uninst/uninstaller
    ```

11. Select all features for uninstallation.

    If prompted with a message that a file "exists on this system and it has been modified since installation. Do you want to remove this file?" Click **No**.

12. Delete the remaining directory trees by entering these commands:

    ```
    rm  -rf {WBICV420 INSTALL DIR}/console/*
    rm  -rf {WBICV420 INSTALL DIR}/receiver/*
    rm -rf {WBICV420 INSTALL DIR}/router/*
    ```

NOTE: Do not delete the `{WBICV420 INSTALL DIR}`/common tree. That is where many of the runtime documents and data are stored.

---

13. As the root administrator, install Business Integration Connect version 4.2.1 using this command:

    `CD_ROM/MEDIA DIR}/hub/setupLinux`

    a. Specify the same installation directory as version 4.2.0.

    b. Select IBM DB2 8.1.2 or later as the database server.

    c. Verify the configuration defaults and override as needed.

14. Review the installation logs in the following locations:

    ```
    /tmp/WBIConnect/logs
    {WBICV421 INSTALL DIR}/console/logs
    {WBICV421 INSTALL DIR}/receiver/logs
    {WBICV421 INSTALL DIR}/router/logs.
    ```

15. Restore any customized configuration from the version 4.20 system. Refer to the configuration backups made earlier and manually merge those changes into the version 4.2.1 configuration files.

16. As `bcguser`, start the document manager, console and receiver by entering the following commands:

    su - bcguser

    {WBICV421 INSTALL DIR}/console/was/bin/startServer.sh server1

    {WBICV421 INSTALL DIR}/receiver/was/bin/startServer.sh server1

    {WBICV421 INSTALL DIR}/router/was/bin/startServer.sh server1

17. Connect to the Community Console on port 58080 using a supported web browser. Log in and use the Event Viewer to find the login event.

NOTE: A change to the base RosettaNet V02.00 package require that it be re-loaded via the console if it had been previously installed with 4.2.0.

Changing the Oracle JDBC driver

If you used Oracle as your database server, you will need to change the Oracle JDBC driver after you have installed WebSphere Business Integration Connect. Follow the procedures in this section to replace your Oracle JDBC driver.

To replace the Oracle JDBC driver:

If you are changing the Oracle JDBC driver, where the directory and the full path name to the driver file will stay the same, then do the following:

1. Stop the Business Integration Connect Console, Receiver, and Document Manager.
2. Replace the Oracle JDBC driver file, `classes12.zip`.
3. Start the Business Integration Connect Console, Receiver, and Document Manager.

If you are changing the Oracle JDBC driver and the full path name of the driver file changes, then do the following:

1. Stop the Business Integration Connect Console, Receiver, and Document Manager.
2. For each component, the Console, the Receiver, and the Document Manager, remove the existing JDBC datasource using `bcgdatabase.jacl`.

   Remove the JDBC datasource. To call information from `bcgdatabase.jacl`:

   ```
   ./wsadmin.sh -f bcgdatabase.jacl -conntype NONE uninstall [db2
   | oracle]  <nodeName> <serverName>
   ```

   Use the following values:

   ./wsadmin.sh -f bcgdatabase.jacl -conntype NONE uninstall oracle DefaultNode server1

3. For each component, the Console, the Receiver, and the Document Manager, create the JDBC datasource by calling `bcgdatabase.jacl`.

   Create the JDBC datasource. To call information from `bcgdatabase.jacl`:

   ```
   ./wsadmin.sh -f bcgdatabase.jacl -conntype NONE install
   <dbType> <dbName> <dbHostname> <dbPort> <dbUserId>
   <dbPassword><nodeName> <serverName> <dbZipFile> <jndiName>
   ```

   Remember to replace the values in <> with values specified during your installation.

4. When installing using the file produced by the Oracle option, `dbZipFile` is the full pathname of the Oracle JDBC driver that should be used to connect to the database. Typically, the file name is `classes12.zip`.

   ```
   ./wsadmin.sh -f bcgdatabase.jacl -conntype NONE install oracle
   <dbName> <dbHostname> <dbPort> <dbUserId> <dbPassword>
   DefaultNode server1 <dbZipFile> datasources/OracleDS
   ```

5. Start the Console, Receiver and Document Manager.

Starting Business Integration Connect

After you have installed Business Integration Connect, you can start it by following the procedures below.

To start Business Integration Connect:

1. Change to the general Business Integration Connect user by entering:

   ```
   su - bcguser
   ```

2. Navigate to the Community Console script directory:

   ```
   cd ProductDir/IBM/WBIConnect/console/was/bin
   ```

3. Start the Community Console by entering the following command:

   ```
   ./startServer.sh server1
   ```

4. Navigate to the Receiver script directory by entering the following command:

   ```
   cd ProductDir/IBM/WBIConnect/receiver/was/bin
   ```

5. Start the Receiver by entering the following command:

   ```
   ./startServer.sh server 1
   ```

6. Go to the Document Manager script directory by entering:

   ```
   cd ProductDir/IBM/WBIConnect/router/was/bin
   ```

7. Start the Document Manager by entering the following command:

   ```
   ./startServer.sh server 1
   ```

8. Open a Web browser and type the following URL:

   Unsecure:

   ```
   http://<hostname>.<domain>:58080/console
   ```

   Secure:

   ```
   https://<hostname>.<domain>:58443/console
   ```

   Where <*hostname*> and <*domain*> are the name and location of the computer hosting the Community Console component.

9. The Web browser displays the Welcome page. Log into Business Integration Connect using the following information:

   - In the **User Name** field, type:

     ```
     hubadmin
     ```

   - In the **Password** field, type:

     ```
     Pa55word
     ```

   - In the **Company Name** field, type:

     ```
     Operator
     ```

Click **Login**.

10. When you log in for the first time, you must create a new password. Enter a new password, then enter the new password a second time in the **Verify** text box.
11. Click **Save**. The system displays the console's initial entry screen.
12. Connect to the Document Manager through this web address:
    `http://<hostname>.<domain>:56969`

You have now logged into Business Integration Connect. See the *Getting Started* guide for information on what to do next, or see "Testing your installation" on page 54 for a way to test your installation.

Testing your installation

Use this procedure to test your installation when Business Integration Connect is running:

1. Create a user login event-based alert and set yourself up as the contact for the alert. For information about creating an alert and adding a contact to the alert, see "Managing alerts" in the *Community Console User's Guide*.
    a. In the **Alert Owner** drop-down list, select **Hub Operator**.
    b. In the **Participant** drop-down list, select **Hub Operator**.
    c. In the **Event Type** drop-down list, select **Info**.
    d. In the **Event Name** drop-down list, select **102002 User Login was successful**.
2. Log out and then log in again as the Hub Admin user.
3. Check your e-mail for an alert message.

Troubleshooting

If you encountered problems while installing the Database Loader, consult the Database Loader logs in `system temp/WBIConnect/logs` directory for information on the problem. Once the problem is resolved, do the following to delete the created database:

1. Run the Database Loader uninstaller and drop the database.
2. Once you have deleted the database, rerun the Database Loader wizard.

If you experience problems installing the Business Integration Connect components, review the following component installation logs:

ProductDir`/IBM/WBIConnect/console/logs`

ProductDir`/IBM/WBIConnect/receiver/logs`

ProductDir`/IBM/WBIConnect/router/logs`

You should also examine the following runtime logs:

ProductDir`/IBM/WBIConnect/console/was/logs/server1`

ProductDir`/IBM/WBIConnect/receiver/was/logs/server1`

ProductDir`/IBM/WBIConnect/router/was/logs/server1`

Uninstalling Business Integration Connect

Use this procedure to uninstall Business Integration Connect or the Database Loader:

1. If later you want to install the components you are uninstalling again, save the options file used to install the components. See "Installing the components using the command line" on page 46.

NOTE: If you plan to install components again, back up the common directory tree, as well as the console, receiver, and document manager directories. You should also back up your database before using the Database Loader uninstaller.

---

2. Shut down WebSphere Business Integration Connect servers in the following order:
   a. Navigate to the *ProductDir*/console/was/bin directory and execute the following command:

      ./stopServer.sh server1

   b. Navigate to the *ProductDir*/receiver/was/bin directory and execute the following command:

      ./shutdown_bcg.sh server1

   c. Navigate to the *ProductDir*/router/was/bin directory and execute the following command:

      ./shutdown_bcg.sh server1

3. In the _unist directory, run the uninstaller executable by entering the following.

   cd _uninst

   ./uninstaller

   The uninstaller wizard starts and displays the Welcome panel. Click **Next**.

4. If you are uninstalling Business Integration Connect, in the Component selection panel, select the components that you want to remove from this system. You can select multiple components.

   Be careful about uninstalling the common shared files. If you do not install the common shared files again into the same location, many of the configurations in properties files and in the database will require changes.

NOTE: Business Integration Connect requires at least one instance of each component. If you remove the only instance of a component, you must install that component on another system. For example, if you remove the only instance of Document Manager on your network, you must install Document Manager on another system.

Click **Next**. The Uninstaller displays the Summary panel.

5. The Summary panel lists the components that the uninstaller will remove. Review this information. If any of this information is incorrect, click **Back** to return to previous panels. When all of the information on the Summary panel is correct, click **Next**.
6. The uninstaller removes the selected components. When it has removed all of the components, the uninstaller enables the **Finish** button. Click **Finish**.
7. Review the files that remain in the directory structure and then recursively remove the directory tree.

NOTE: If you use the silent unistaller, you must use the sample file provided to create the silent uninstall response file.

Chapter 3. Installing Business Integration Connect on Windows

The following procedures describe how to install Business Integration Connect on a Windows system. This chapter also details starting Business Integration Connect for the first time, testing the installation, and troubleshooting. Finally, this chapter details how to uninstall Business Integration Connect.

This chapter contains the following sections:

Installation overview

This section provides a high-level view of the Business Integration Connect installation process.

The following tasks are described in detail in this guide:

1. Confirm that your system meets the minimum hardware and software installation prerequisites.
2. Create and configure the Business Integration Connect database tables.
3. Install the Business Integration Connect software.

Verifying and configuring installed prerequisites

Before you install Business Integration Connect, ensure that you have all the necessary prerequisites. The topics in this section give you a brief overview of the system hardware and software requirements, the supported databases, and the user accounts required to run Business Integration Connect software.

Pre-installation checklists are included at the end of this section to help prepare for the installation. This table lists the tasks that must be performed before you install Business Integration Connect. Use this checklist to make sure that the server is ready to install Business Integration Connect.

- Table 1 lists information required by the Database Loader installation wizard. This table lists the values that you must enter when you run the Database Loader Installation wizard. When you are planning your install, you can record required installation information in this table. For example, the database instance name and tablespace information.
- Table 2 lists information required by the Business Integration Connect installation wizard. This table lists the values that you must enter when you run the Business Integration Connect Installation wizard. As you plan your installation, you can record required installation information such as the host name of the WebSphere MQ server and port numbers for the Community Console, Receiver, and Document Manager.

This section contains the following topics:

Adding user accounts

In order to connect with the database, Business Integration Connect requires a set of operating system users. The following procedure walks you through setting up these users. Although this procedure uses default names, you can substitute your own user and group names. Note that if you use your own group and user names, they cannot exceed eight characters.

To create user accounts:

1. Click **Start** > **Settings** > **Control Panel**, then double-click **Administrative Tools** > **Computer Management** > **Local Users and Groups**.

   The Local Users and Groups dialog box appears. Right click **Users** and select **New User**.

   The New User dialog box appears. Add users, bcguser, bcgcon, bcgdoc and bcgrecv. Also select the **Password Never Expires** option.

   Business Integration uses a user in this group to manage Business Integration Connect components.

NOTE: Oracle users are only required to create the bcguser user.

---

2. From the Users and Groups dialog box, right click **Groups** and select **New Group**.
3. The New Group dialog box appears. Add the group bcggroup.
4. Add the following users to bcggroup: bcguser, bcgcon, bcgdoc and bcgrecv.

NOTE: Oracle users are only required to add bcguser user to bcggroup.

---

5. Exit the computer management.
6. Record the user names and passwords in the tables in "Pre-installation checklist tables" on page 61.

Configuring WebSphere MQ

The following procedure describes how to configure WebSphere MQ after it is installed. See "Platform, hardware, and software requirements" on page 9 for a list of SupportPacs and updates that must be applied. For information on specific commands used in this procedure, see the WebSphere MQ documentation.

To configure WebSphere MQ:

1. Make sure that you are logged into your operating system as an administrator or a user that is a member of the administrator's group.
2. Create the queue manager:

   crtmqm -q bcg.queue.manager
3. Update the channel parameters by changing the properties in this procedure. From MQServices, right click your queue manager, select properties, and channels.

   Update the channel properties with the following values:

   ```
   MaxChannels=1000

   MaxActiveChannels=1000
   ```
4. If the computer has more than one CPU, enter the following command:

   ```
   setmqcap <number of CPUs>
   ```
5. Start the queue manager with the following command:

   ```
   strmqm bcg.queue.manager
   ```
6. Start the listener with the following command:

   ```
   runmqlsr -t tcp -p 9999 -m bcg.queue.manager
   ```
7. The listener runs in this window, so leave it open.
8. Open a new window and start the JMS Broker (the publish-subscribe broker) with the following command:

   ```
   strmqbrk -m bcg.queue.manager
   ```
9. Start the MQ command services with the following command:

   ```
   strmqcsv bcg.queue.manager
   ```
10. Use the `Tools\MQSeries\create_wbic_queues.mqsc` file to define the queues and channels for the queue manager:

    ```
    runmqsc bcg.queue.manager <
     <CD image>\Tools\MQSeries\create_wbic_queues.mqsc
    ```

    Where *<CD image>* is the location of Business Integration Connect CD or the location of the unarchived Business Integration Connect installation files.

11. Use the *MQHomeInstallDir*\mqm\java\bin\MQJMS_PSQ.mqsc file to configure the JMS publish and subscribe queues:

```
runmqsc bcg.queue.manager <
      MQHomeInstallDir\mqm\java\bin\MQJMS_PSQ.mqsc
```

12. Record the MQ host name, queue manager name, and listener port in "Pre-installation checklist tables" on page 61.

Installing and configuring DB2

The Business Integration Connect database should reside on a dedicated server. If you are creating the server, use the following procedure to install and set up DB2.

When installing WebSphere Business Integration Connect, you can use the `Create_db2.sql` script to create and configure the database. The database is configured with the assumption that DB2 UDB is running on a multi-processor machine. In particular the `DFT_DEGREE` parameter is set to 4 which indicates that a SQL query is executed as 4 sub-processes running in parallel. If you are running DB2 UDB on a single processor machine, this configuration is not optimal and might cause a system memory and CPU conflict. We recommend that you review the database configuration with your database administration and modify it if necessary to conform to your specific database environment.

NOTE: Business Integration Connect does not use the fenced-user option. Do not use the fenced-user ID as part of the Business Integration Connect Installation.

---

1. Install DB2 by following the installation instructions provided and using the DB2 Setup wizard. In the wizard, do the following:
   - When you come to the panel in which you select the type of installation, select a **Custom** install. In the following panel, add **Application Development Toolkit** to the default selections.
   - For the remaining panels, use the default values or your own values. Note the instance name, instance owner userid, and password, and record them in the **Information required by the Database Loader Installation wizard** table later in this section. For information on these options, see the installation guide for DB2.
2. When you have completed the DB2 installation, install the FixPack2 using the instructions in the FixPackReadme.txt.
3. If DB2 is not running, start it by running the following command:

   ```
   db2start
   ```

4. Verify that the correct C++ compiler and libraries are installed. Make sure that system environment variables (%PATH, %LIB, %INCLUDE) are set to point to the C++ compiler. When you set the system environment variables, make sure you log out of Windows 2000 and log in to make sure the system environment has been updated with all new processes. Refer to the DB2 Application Development Toolkit documentation for the required package names, and versions.

If you are using an existing installation, do the following:

1. Verify that the DB2 Application Development Toolkit is installed. For information on how to install the toolkit, see the DB2 documentation.
2. Check for header files in `C:\DB2HomeInstallDir\V8.1\include` directory.
3. Verify that the correct C++ compiler and libraries are installed. Make sure that system environment variables (%PATH, %LIB, %INCLUDE) are set to point to the C++ compiler. When you set the system environment variables, make sure you log out of Windows 2000 and log in again to make sure the system environment has been updated with all the new processes. Refer to the DB2 Application Development Toolkit documentation for the required package names, and versions.

Record the names and passwords in the tables in "Pre-installation checklist tables" on page 61.

Installing and configuring Oracle

This guide does not provide installation instructions for Oracle 9i. See the appropriate Oracle documentation for the installation procedures.

IBM recommends that you follow these guidelines as you install your Oracle database:

1. Export Oracle system environment variables, as described in the Oracle installation documentation. This is required for the administrator user if the Database Loader is to run SQL automatically during the Business Integration Connect installation process.
2. The Oracle 9i JDBC driver must be available, either downloaded or copied to the computer(s) that will run the hub components. The JDBC driver must be the same level as the Oracle version that is installed.

Record the names and passwords in the tables in "Pre-installation checklist tables" on page 61. Record the default values also, especially if they were changed.

Pre-installation checklist tables

The following table lists the tasks that must be performed before you install Business Integration Connect.

Task	✓
1. User group, bcggroup, exists in the operating system. Operating system user bcguser exists and is a member of bcggroup. If you are using DB2, operating system users bcgcon, bcgdoc & bcgrecv all exist and are members of bcggroup. If you are using Oracle, the O/S users bcgcon, bcgdoc and bcggrecv are not required.	
2. DB2 or Oracle is installed and configured on a server.	
3. WebSphere MQ is installed and configured on a server.	
4. A SMTP server exists. (optional)	
5. If multiple computers are used create network file shares on each computer for the shared common files.	

When you have completed all of the above tasks, you are ready to install Business Integration Connect.

The following table identifies information that you must have before you start the Database Loader wizard. Consult the table as you run the Database Loader wizard.

Information required before starting the Database Loader wizard

Required Information	Value
Business Integration Connect user name	(bcguser is the default)
Business Integration Connect user password	
Business Integration Connect group name	(bcggroup is the default)
Community Console user name	(bcgcon is the default)
Community Console user password	
Document Manager user name	(bcgdoc is the default)
Document Manager user password	
Receiver user name	(bcgrecv is the default)
Receiver user password	

The following table identifies information that you must have before you start the Business Integration Connect installation wizard. Consult the table as you run the installation wizard.

Information required before starting the Business Integration Connect installation wizard

Required Information	Value
WebSphere MQ host name	
WebSphere MQ Queue Manager	(bcg.queue.manager is the default)

Information required before starting the Business Integration Connect installation wizard

Required Information	Value
WebSphere MQ port for Listener	9999
Mount Point for Shared Location	
Database host name	
Database port	default is (DB2=50000 if using default Instance). (Oracle=1521)
Database owner (DB2)	
Owner's password (DB2)	
Database name (DB2)	
Instance name (DB2)	
Administrator login ID (Oracle)	
Administrator password (Oracle)	
Oracle SID (Oracle)	
Schema owner login (Oracle)	
Schema owner password (Oracle)	
Business Integration Connect user name	(bcguser is the default)
Business Integration Connect user password	
Business Integration Connect group name	(bcggroup is the default)
Community Console user name	(bcgcon is the default)
Community Console user password	
Receiver user name	(bcgrecv is the default)
Receiver user password	
Document Manager user name	(bcgdoc is the default)
Document Manager user password	
SMTP host name	
SMTP Port Number	(25 is the default)

Installing Business Integration Connect

When you have met all of the prerequisites noted in previous sections, you are ready to run the Database Loader and WebSphere Business Integration Connect installation wizards.

Setting up the database

Business Integration Connect includes a Database Loader installation wizard to set up the database tables. This wizard gathers information to create and populate the tables for you. Alternatively, it can save the SQL files it uses to create the tables. You can then use the SQL files to create and populate the tables on your own.

Before you begin, verify that your database server is installed, configured correctly, and running.

The following procedure describes how to configure the database using the Database Loader GUI. You can also install the Database Loader without using the GUI.

NOTE: If you plan to use DB2 as your database server, you must execute the SQL (either manually or automatically) as the DB2ADMIN Windows user.

To set up the database tables:

1. Log in as DB2ADMIN if you are using DB2 as your database.

NOTE: Database Loader requires administrator privileges to automatically run the SQL create/change ownership of the tablespaces directories. Only the administrator can change the owner of a file.

---

2. Run the Database Loader `CD-MediaDir\DBLoader\setup.exe` file located on the WebSphere Business Integration Connect system product CD.

   The Database Loader wizard starts and displays the Welcome panel. Click **Next**.

3. In the Software License Agreement panel, read the Software License Agreement. If you agree to the terms in the agreement, select **I accept the terms of the license agreement**. Click **Next**.

4. In the Directory Name panel, type the path and directory name of the directory that the Database Loader will use when it sets up the database.

   Select a location with enough space for your database and all the application data that will be stored in it.

   Click **Next.**

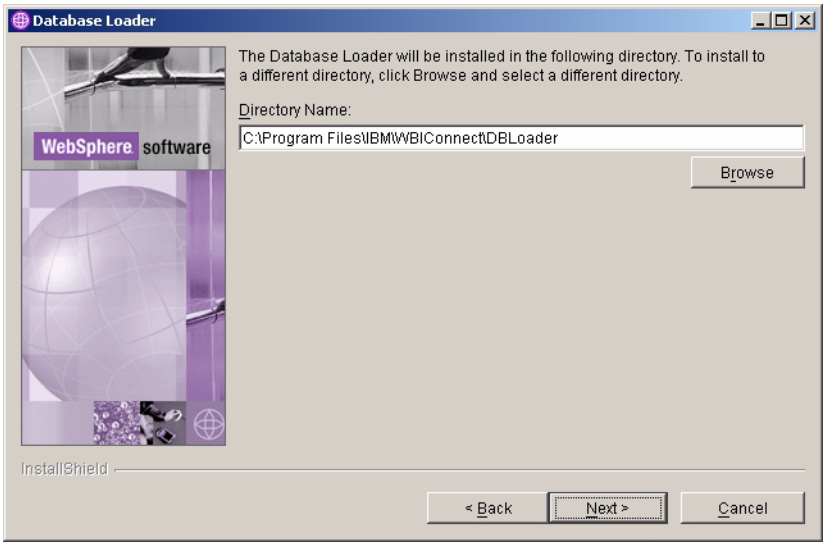

Figure 3-1. Directory Name panel

5. The Database Type Selection panel opens. In the Database Type Selection panel, select the database. You can select either DB2 or Oracle.

   Click **Next**.

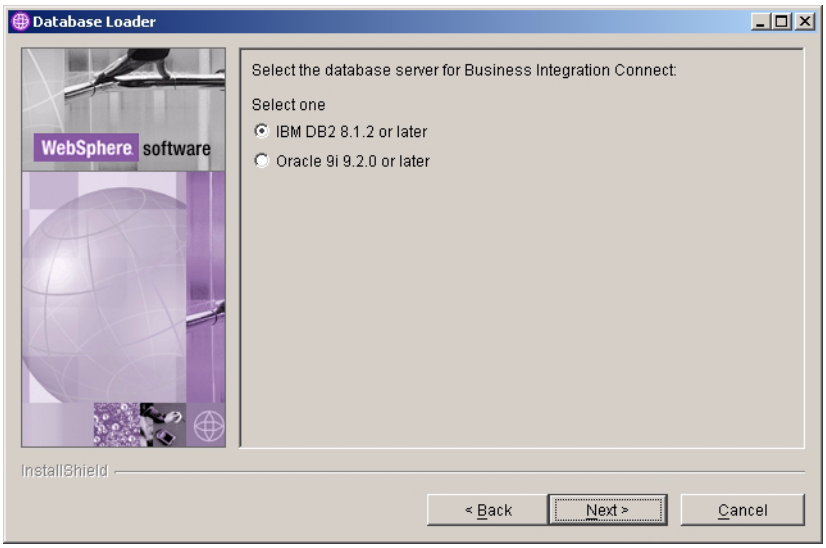

Figure 3-2. Database Type Selection panel

6. In the Database Information panel, type the following database information, then click **Next** when you are finished.

   DB2:

   If you selected DB2, the DB2 Database Information panel appears. Enter the following DB2 database information:

   - Database name
   - Instance name
   - Group name
   - Owner name

NOTE: If any of these values are changed, they must exist before executing the SQL files. If they do not exist, then they must be created manually.

Click **Next**.

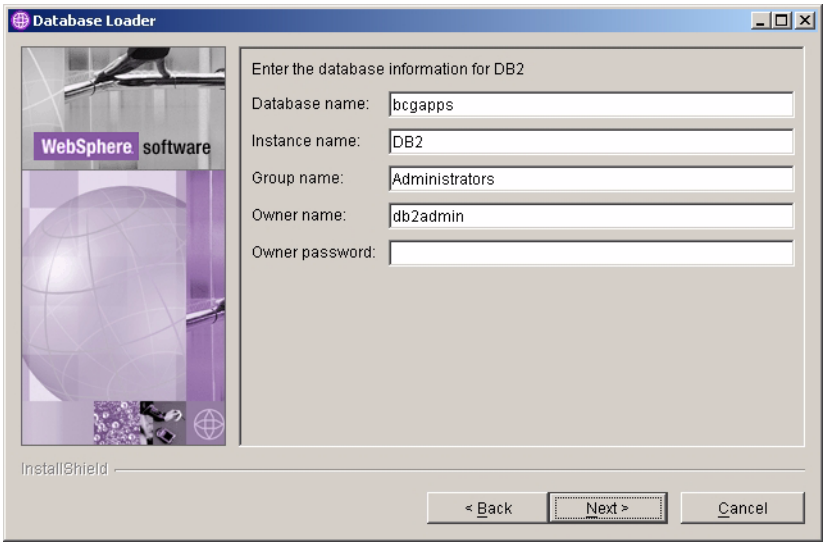

Figure 3-3. DB2 Information panel

Oracle:

If you selected Oracle, the Oracle Database Information panel appears. Enter the following Oracle database information:

- Administrator login ID
- Administrator password
- Oracle SID
- Schema owner login
- Schema owner password

NOTE: If any of these values are changed, they must exist before executing the SQL files. If they do not exist, then they must be created manually.

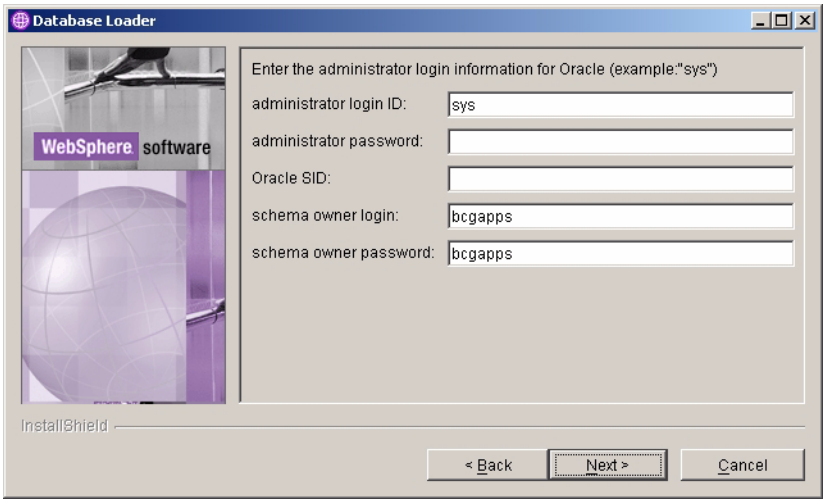

Figure 3-4. Oracle Information panel

7. The Database Location panel appears.

   DB2:

   In the Database Location panel, type the location of the database and each one of its tablespaces on the RDBMS server. The text boxes must contain the full path.

   Click **Next**.

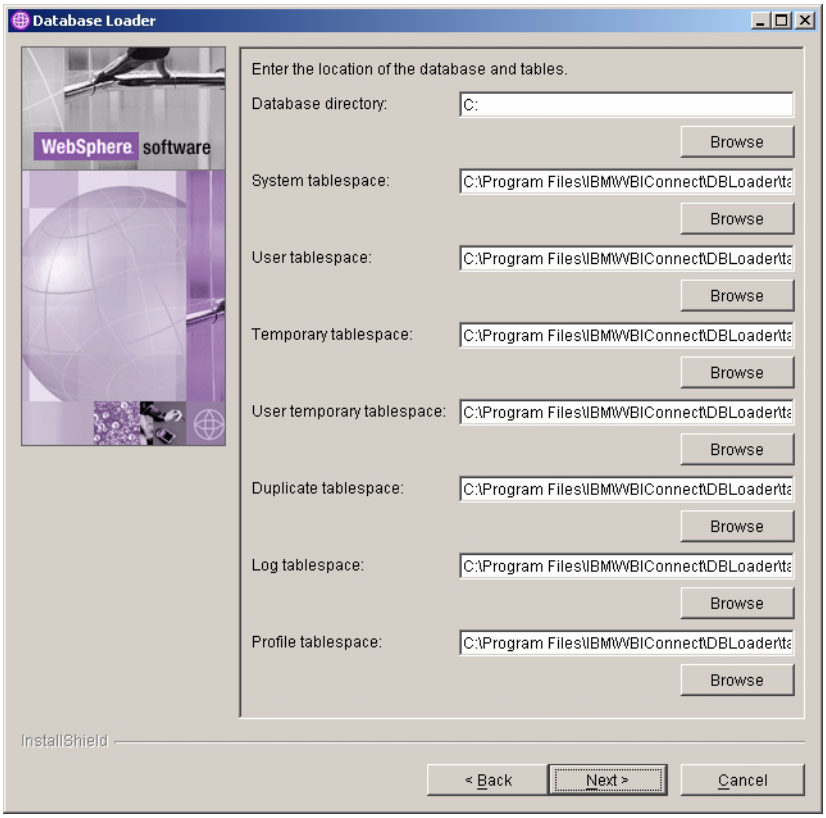

Figure 3-5. DB2 Database Location panel

Oracle:

In the Database Location panel, type the location of the database and each one of its tablespaces on the RDBMS server. The text boxes must contain the full path.

Click **Next**.

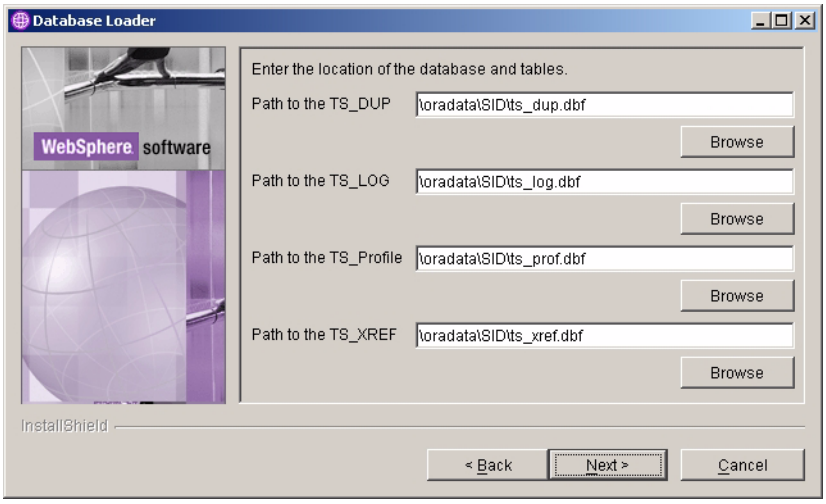

Figure 3-6. Oracle Database Location panel

8. In the Component Configuration panel, type the login information for the Business Integration Connect components and the location of the common shared files.

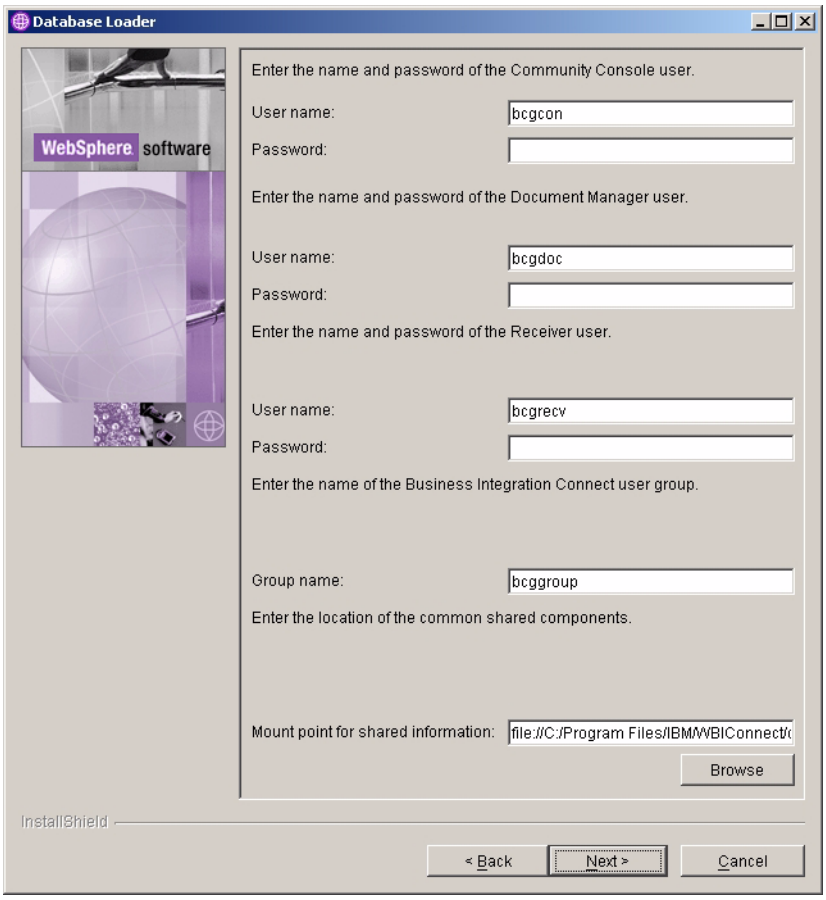

Figure 3-7. Component Configuration panel

In the **User name** and **Password** text boxes for the Community Console, Document Manager and Receiver, type the name and password of the user for that component. These users were created when the server was configured.

In the **Group Name** text box, type the name of the group that contains the Business Integration Connect users.

In the **Mount point for shared information** text box, type the location of the common shared files used by the main components of Business Integration Connect. Record the Mount point in the table in the beginning of the Business Integration Connect installation procedure. See "Installing the components using the install wizard" on page 73.

Click **Next**.

9. The system displays the Summary panel. Review the information on the Summary panel, which identifies where the Database Loader will be installed. If this location is incorrect, click **Back** to return to previous panels. When the information on the summary panel is correct, click **Next**.

10. The wizard displays a panel where you can select whether the Database Loader either creates the SQL files only or creates the SQL files and then runs them for you. The default behavior is to just create the SQL files.

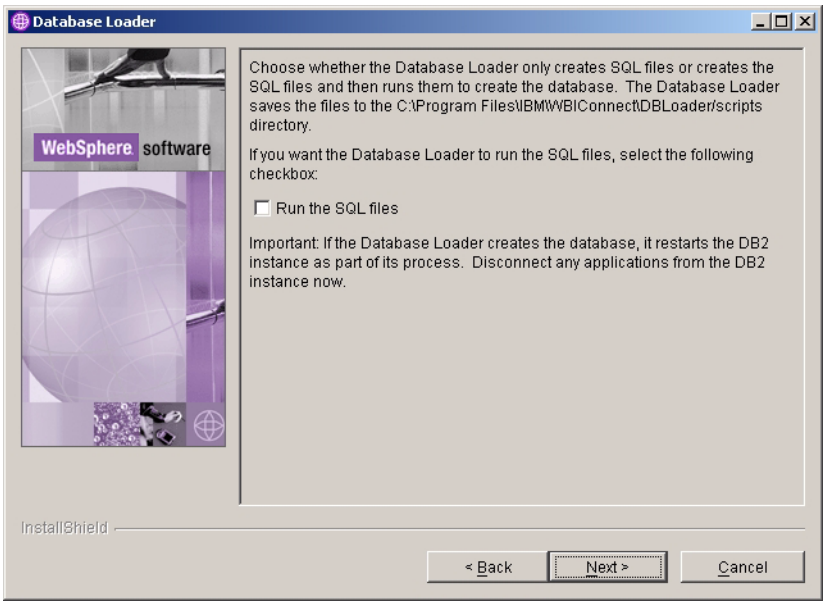

Figure 3-8. Run the SQL Files panel

If the Database Loader runs the SQL files, it does the following:

- Creates the tablespaces
- Creates the schema
- Creates the tables, views, sequences, procedures, and functions, then populates them with metadata
- Assigns permissions to the tables
- Compiles the stored procedures

Because the Database Loader restarts the DB2 instance as part of its routine, disconnect any applications that are using the DB2 instance where you are setting up the Business Integration Connect database.

If you want the Database Loader to run the files for you, select the **Run the SQL files** check box.

Click **Next**.

11. When the Database Loader enables the **Finish** button, click it.
12. If you are running the SQL manually, refer to the `Instructions.txt` file in the SQL directory (installed by the Database Loader) for more information
13. Check the temp`\WBIConnect\logs\dbscript_execution.log` for unexpected `SQLSTATE=errors`.

The path for DB2 is:

```
C:\Documents and Settings\db2admin\Local
Settings\Temp\WBIConnect\logs\dbscript_execution.log
```

The path for Oracle is:

```
C:\Documents and Settings\Administrator\Local
Settings\Temp\WBIConnect\logs\dbscript_execution.log
```

14. For DB2, confirm that the database was created successfully by doing the following SQL query in a command line:
    a. Use the DB2 CLP (command line processor).
    b. Enter the DB2 interactive mode:

       ```
       db2
       ```

    c. Connect to the database as one of the Business Integration Connect component users by entering the following:

       ```
       connect to bcgapps user bcgcon using <password>
       ```

       Where <*password*> is the password for the bcgcon user.

    d. Count the number of stored procedures by entering the following:

       ```
       Select count(*) from syscat.procedures where
       procschema='DB2ADMIN'
       ```

       The command should return 384. If it does not, see "Uninstalling Business Integration Connect" on page 90.

    e. Repeat steps c and d for the bcgdoc user and the bcgrecv user. They should also return 384 stored procedures.
    f. To exit the DB2 interactive mode, enter the following command:

       ```
       quit
       ```

15. **For Oracle**, confirm that the database was created successfully.
    a. Log into Oracle the owner.
    b. Successfully go into sqlplus as each of the defined users (bcgapps, bcgcon, bcgrecv, bcgdoc) by entering the following:

       ```
       sqlplus bcgapps/<pw for bcgapps>
       ```

       Where <pw for bcgapps> is the password entered for bcgapps during execution of the Database Loader.

    c. Log out from the Oracle owner.

When you have set up the Business Integration Connect database, you are ready to install the Business Integration Connect components.

Installing the components using the install wizard

Business Integration Connect has three main components: Community Console, Receiver, and Document Manager. All three components share common content. You can either install the components and common content on a single server or install each component on a separate server. The only restriction is that you must install one instance of each component on at least one server. See "Environment planning" on page 13 and "Topologies" on page 15 for information on how to plan the placement of the various components on different servers.

Before you begin, make sure that the machine where you are installing one or more Business Integration Connect components has the prerequisite software installed and configured properly. Consult the Requirements for all Business Integration Connect servers table in "Platform, hardware, and software requirements" on page 9 for software prerequisites and "Verifying and configuring installed prerequisites" on page 57 for information on how to configure that software.

You must also have the Business Integration Connect database set up. For information on this, see "Setting up the database" on page 64. Finally, your database server and WebSphere MQ must be running.

The following procedure describes how to install the components using the InstallShield wizard GUI. You can also install the components without using the GUI.

To install Business Integration Connect follow the steps below:

1. Log in as a user with Administrator privileges.

   Hub installer requires Administrator privilege to properly create the Windows service.

2. Run the `CD-MediaDir\hub\setup.exe` file located on the WebSphere Business Integration Connect system product CD.

   The wizard starts and displays the Welcome panel. Click **Next**.

3. In the Software License Agreement panel, read the license agreement. If you agree to its terms, click **I accept the terms of the license agreement**. Click **Next**.

4. In the Directory Name panel, type the path and directory name of the directory where Business Integration Connect is installed. Click **Next**.

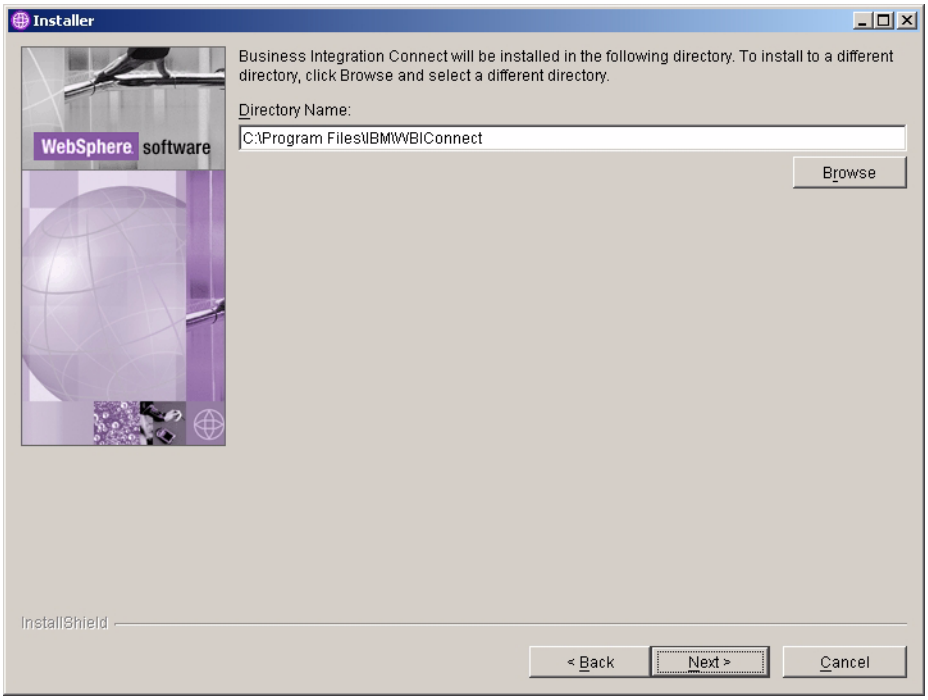

Figure 3-9. Directory Name panel

5. In the Component Selection panel, select the components you want to install on the server. You can select multiple components.

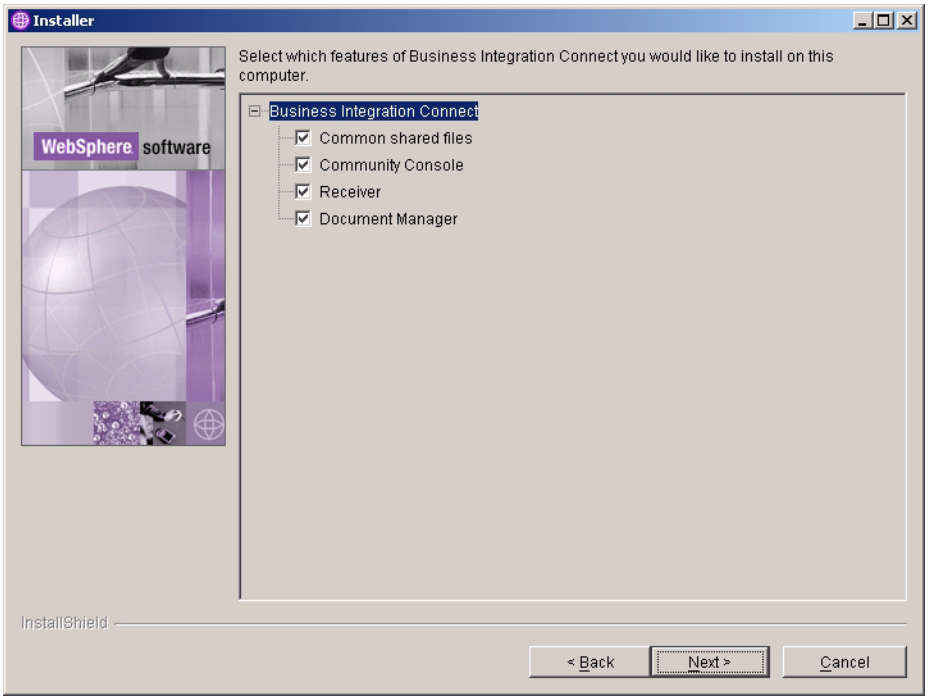

Figure 3-10. Component Selection panel

The rest of this procedure assumes that you are installing all of the components on the server. If you are not installing all of them, some of the panels described in the rest of this procedure will not appear. Click **Next**.

6. In the User Information panel, type the User name, password, and Group name of the Business Integration Connect user. The user and group were created when the server was configured. See "Adding user accounts" on page 58 for more information.

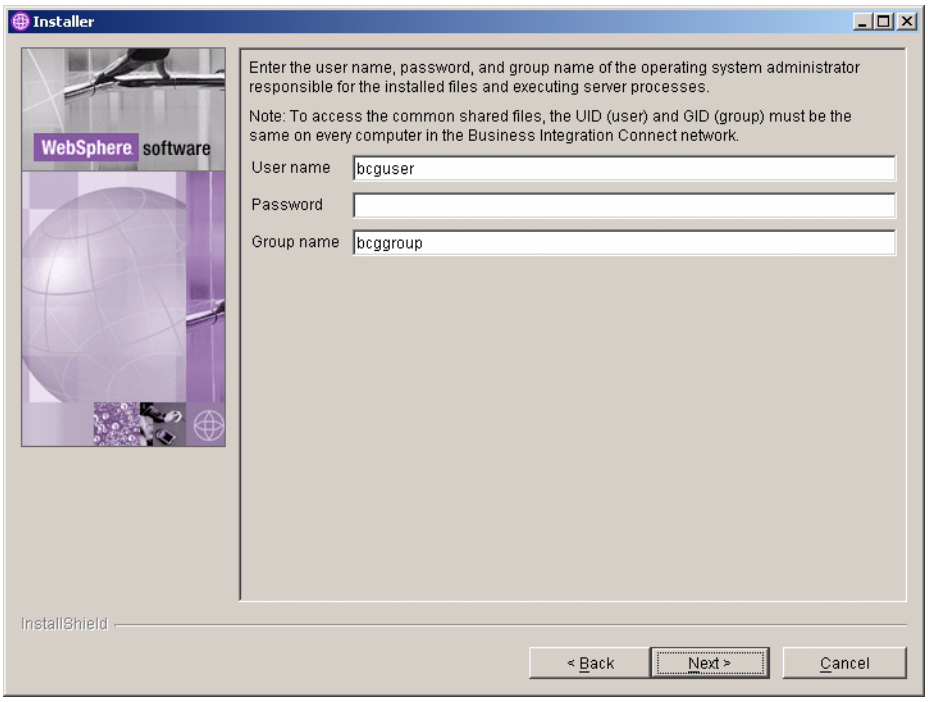

Figure 3-11. User Information panel

7. In the WebSphere MQ Server panel, type information about your WebSphere MQ server.

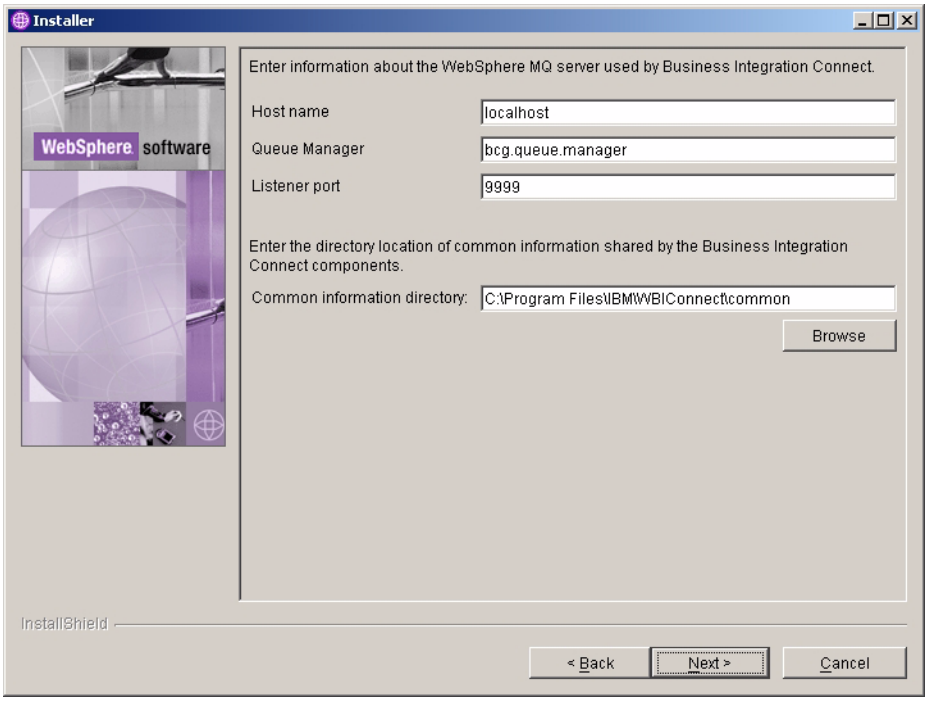

Figure 3-12. WebSphere MQ Server panel

In the **Host name** text box, if WebSphere MQ is not on the current machine, replace `localhost` with the name of the system containing WebSphere MQ.

In the **Queue Manager** text box, replace the default name with the name that was used when configuring WebSphere MQ (see "Configuring WebSphere MQ" on page 59.)

In the **Listener Port** text box, type the port that the listener is using (see "Configuring WebSphere MQ" on page 59.)

In the **Common information directory** text box, type the location of the common shared components. This value **must** match the directory location used in the Database Loader installation.

Click **Next**.

8. The Windows Service Installation panel appears. If you would like to register Business Integration Connect features as a Windows service, select the **Install as Windows Service** check box.

   Click **Next**.

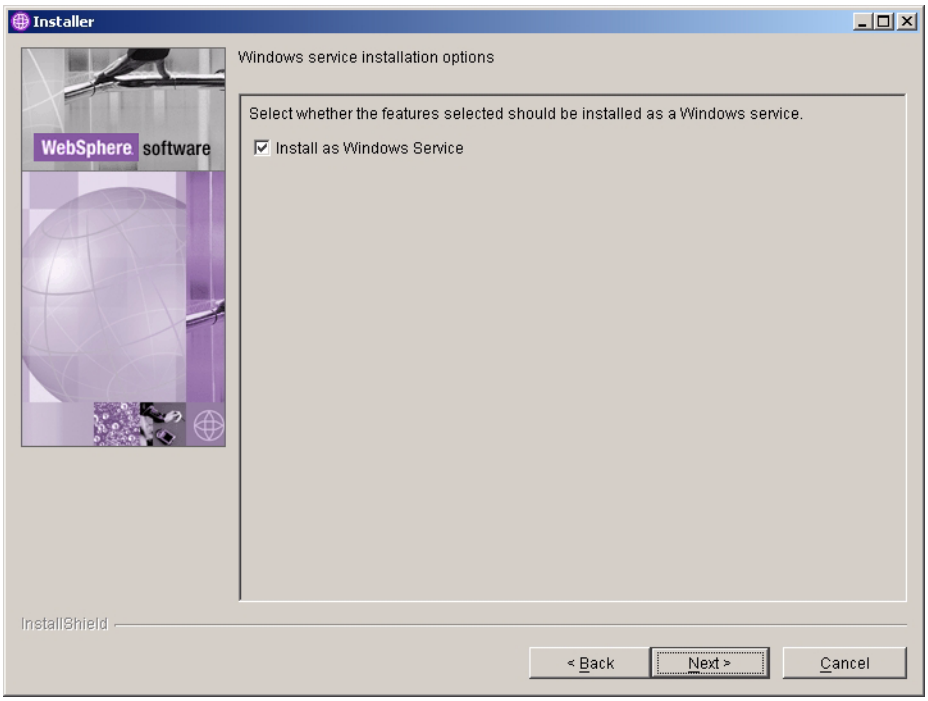

Figure 3-13. Windows Service Installation panel

9. The Database Server Selection panel appears. Select the database server that you plan to use. You can select either DB2 8.1.2 or later or Oracle 9i.9.2.0 or later.

   Click **Next**.

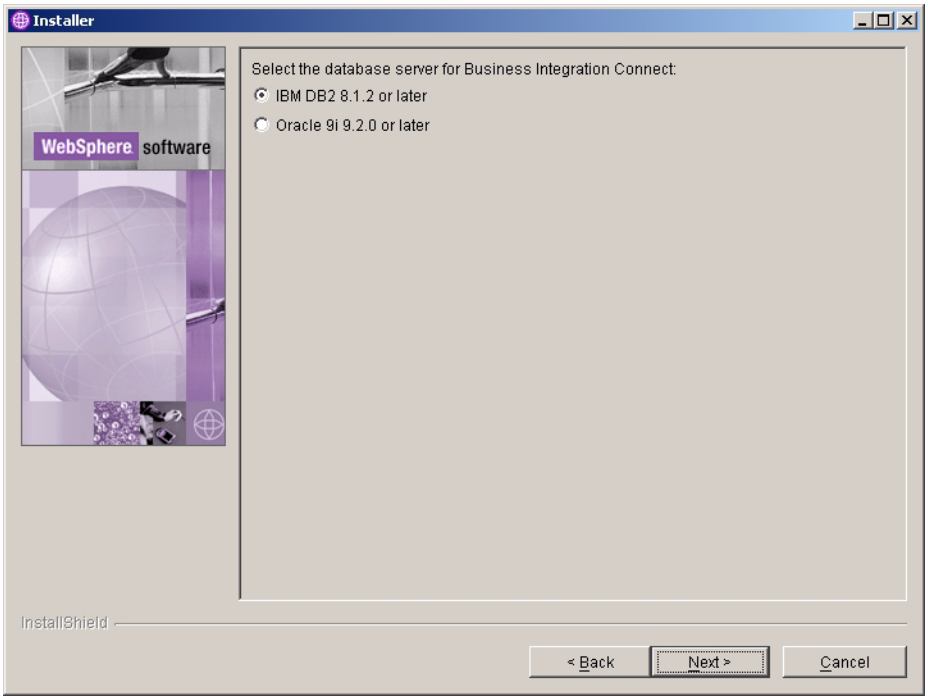

Figure 3-14. Database Server Selection panel

10. The Database Information panel appears. If you selected DB2 as your database, follow the DB2 specific instructions in this procedure. If you selected Oracle as your database, follow the Oracle specific instructions in this procedure.

    DB2: If you selected DB2, the DB2 Database Information panel appears.

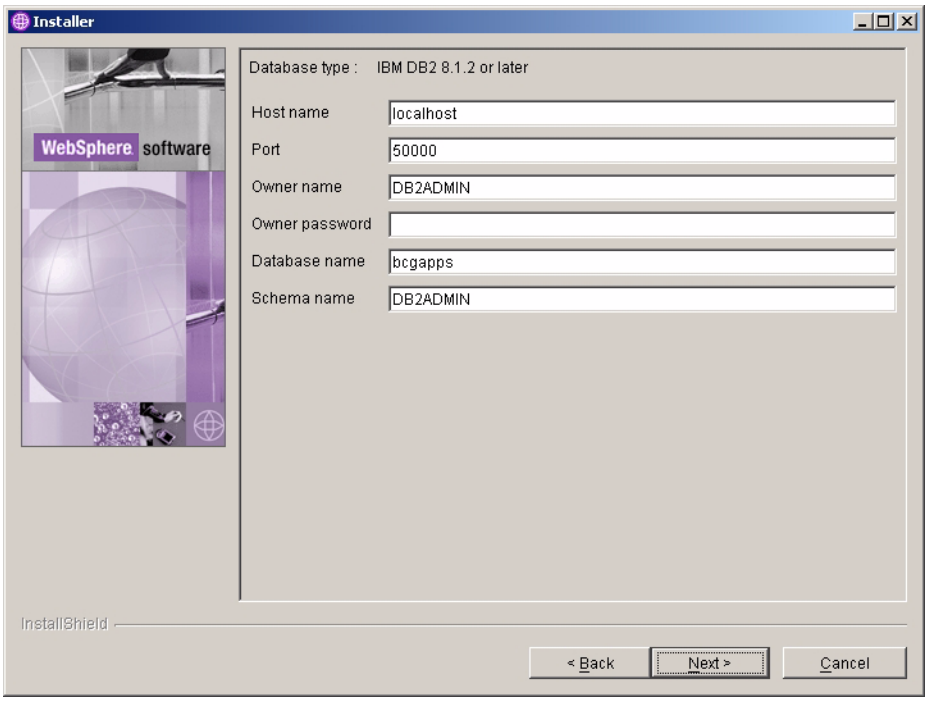

Figure 3-15. DB2 Database Information panel

Enter the requested information about the DB2 database.

In the **Host name** text field, if DB2 is not on the current system, replace `localhost` with the name of the system containing DB2.

In the **Port text** field, type the port that the DB2 instance is using. To find out which port the DB2 instance is using, either use the DB2 Control Center (GUI) to determine the properties or type the following on a command line: `db2 get dbm cfg`. This information (DB2 configuration) is also saved by the Database Loader in the `"system temp"/WBIConnect/logs` directory. The default port is 50000.

The path for DB2 is:

```
C:\Documents and Settings\db2admin\Local
Settings\Temp\WBIConnect\logs
```

The path for Oracle is:

```
C:\Documents and Settings\Administrator\Local
Settings\Temp\WBIConnect\logs
```

In the **Owner name**, **Owner Password**, **Database name**, and **Schema name** text fields, enter the requested information. These are the names that were used in the Database Loader installation to define the database. See "Setting up the database" on page 64. Note that for the Schema name, the value you enter must be in all uppercase characters.

Click **Next**.

Oracle:

If you selected Oracle, the Oracle Database information panel appears. Enter the required information about the Oracle database.

NOTE: The full path and name of the JDBC driver must point to the correct version of the driver on this computer. The driver can be found in the Oracle 9i installed directory tree. It can be downloaded from http://otn.oracle.com/software/tech/java/sqlj-jdbc/index.html. In the section "JDBC Driver Downloads" click on Oracle 9i Release 2 drivers. Be sure to select the driver version that matches the Oracle 9i 9.2.0 service version that you are running.

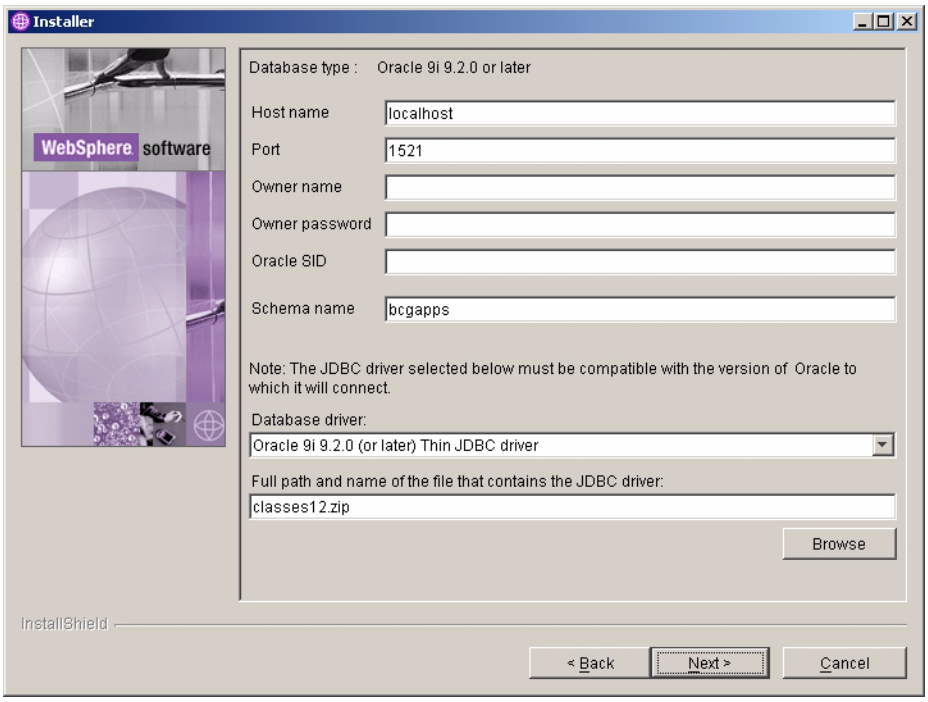

Figure 3-16. Oracle Database Information panel

11. If you selected to install the Community Console, configure it using the Community Console configuration panel.

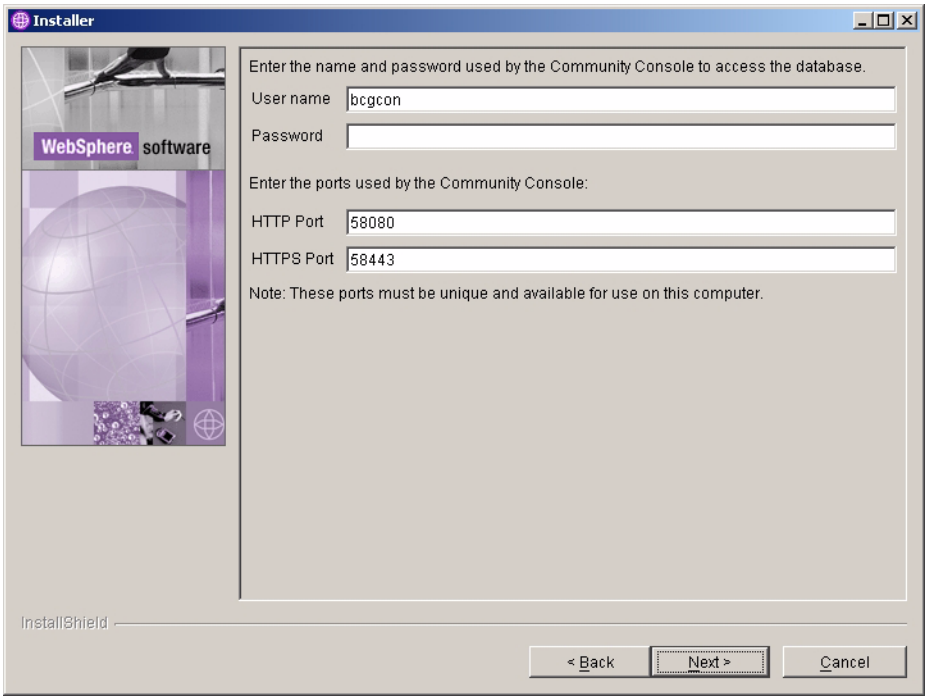

Figure 3-17. Community Console panel

In the **User name** text box, type the user ID that the Community Console component uses to log into the database.

In the **Password** text box, type the password associated with the user name. Make sure that you enter the correct password, because the Community Console will not function with an incorrect password.

In the **HTTP Port** text box, type the number of the port on which the component listens for messages. The Community Console, Receiver, and Document Manager must have unique port numbers, and they must be available on this computer.

In the **HTTPS Port** text box, enter the number of the secure port on which the component listens for messages. The Community Console, Receiver, and Document Manager must have unique port numbers, and they must be available on this computer.

Click **Next**.

12. If you selected the Receiver or Document Manager components, configure them using their configuration panels. These panels have the same fields as the Community Console Configuration panel. Note that all three components (Community Console, Receiver, and Document Manager) must have different HTTP and HTTPS ports.

    Click **Next** when you are finished.

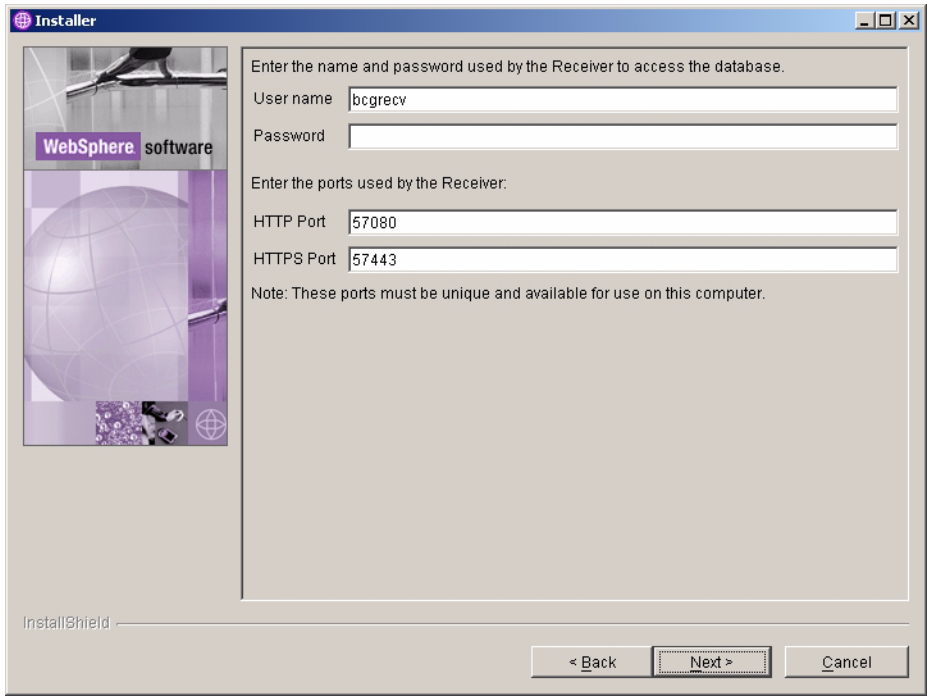

Figure 3-18. Receiver Configuration panel

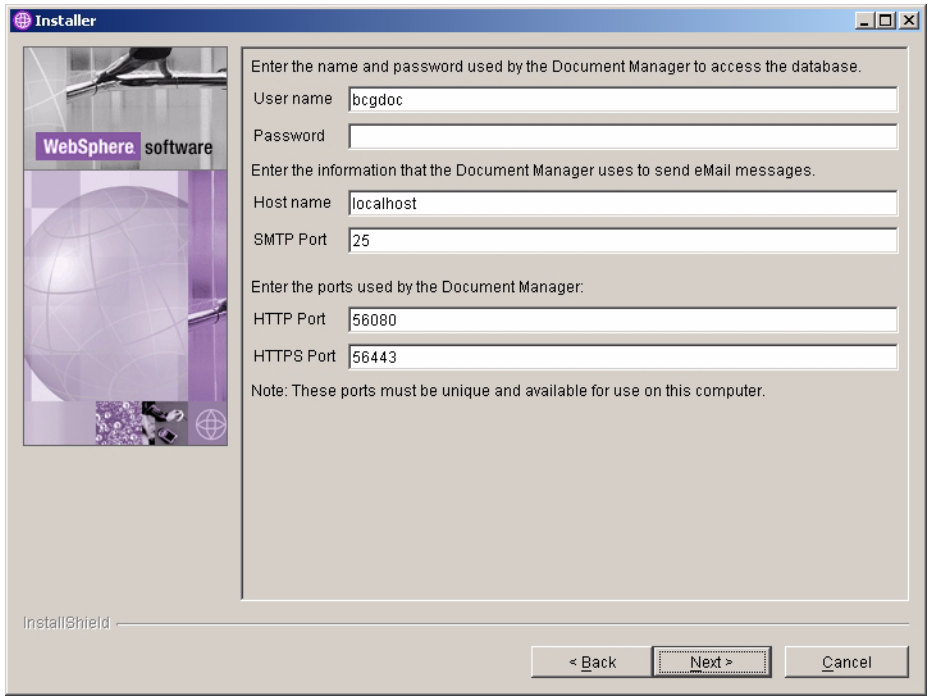

Figure 3-19. Document Manager Configuration panel

13. In the RosettaNet Configuration panel, type the contact Information for RosettaNet messages. Values are required in these text fields. Use the default values if you do not know the proper values.This information is required if you are using RosettaNet and is recommended for all installations.

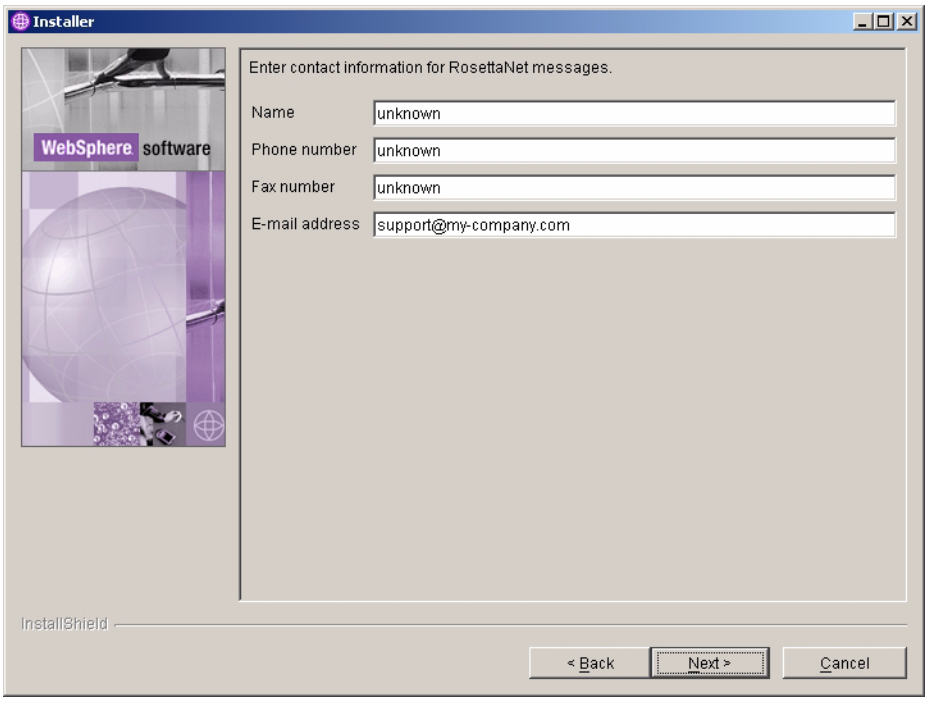

Figure 3-20. RosettaNet Configuration panel

In the **Name** text box, type the name of the person that should be contacted for RosettaNet problems.

In the **Phone number** and **Fax number** text boxes, type the telephone and fax numbers of the RosettaNet contact person.

In the **E-mail address** text box, type the RosettaNet contacts' e-mail address.

Click **Next**.

14. In the Alert Notification panel, configure Business Integration Connect so that it can send alerts by e-mail. Values are required. Use the default values if you do not know the proper values.

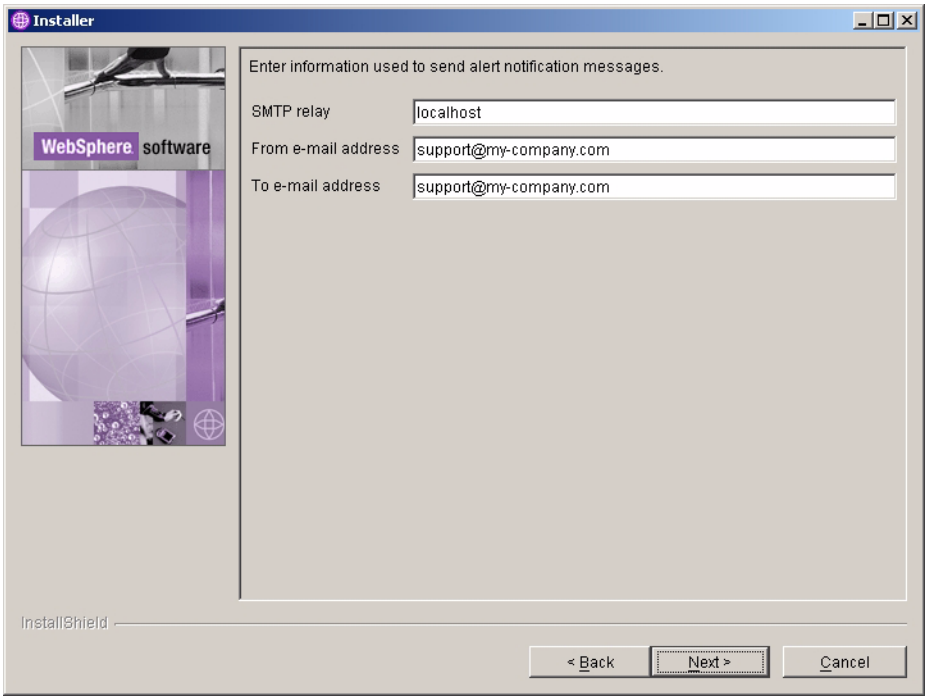

Figure 3-21. Alert Notification panel

In the **SMTP relay** text box, type the location of the SMTP server.

In the **From e-mail address** text box, type the e-mail address Business Integration Connect uses to send e-mails.

In the **To e-mail address** text box, type the destination e-mail address that users responding to Alert Notifications use when they send a response e-mail.

Click **Next**.

15. In the Summary panel, review the information on this panel, which identifies the components that will be installed. If any of this information is incorrect, click **Back** to return to previous panels. When all of the information on the summary panel is correct, click **Next**.
16. The Business Integration Connect Installer installs and configures the selected components. When it has completed this task, the installer enables the **Finish** button. Click **Finish**.
17. Open `console\was\wbic\config\bcg_console.properties`. Verify that the following value is set: `bcg.co.db.schema=`**`DB2ADMIN`**.
18. Open `receiver\was\wbic\config\bcg_console.properties`. Verify that the following value is set: `bcg.co.db.schema=`**`DB2ADMIN`**.
19. Open `router\was\wbic\config\bcg_console.properties`. Verify that the following value is set: `bcg.co.db.schema=`**`DB2ADMIN`**.

Repeat this procedure on each server where you want to install Business Integration Connect components and the common content. When you have installed all Business Integration Connect components, see "Installing the components using the command line" on page 86.

Installing the components using the command line

Business Integration Connect also provides a way to install the components using a command line. This feature requires an options file that provides values for all of the installation options. You can either modify the provided sample ISS files or perform an install using the GUI and record your choices to create a custom options file. The sample files for the Database Loader are in the Database Loader directory on the CD or in the unarchived install image while the Business Integration Connect sample files are in the hub directory on the CD or in the unarchived install image.

Each option in the file appears on a separate line and is preceded by comments that describe the setting and present an example of the option. In the sample files, the option values are the default values presented in the GUI. Some settings, such as passwords and hostnames, require information about the local configuration.

You can also generate your own options file while running the install or uninstall program that you can then use to duplicate the install or uninstall. For information, see the next section "Performing a silent install" on page 87.

To install the Database Loader or Business Integration Connect using the command line:

1. If you are installing the Database Loader, log in as DB2ADMIN.
2. If you are installing Business Integration Connect, log in as the administrator.
3. Open a command line on the machine on which you want to install the code.
4. Navigate to the location of the installation executable. For example,

   ```
   cd DBLoader
   ```

   or

   ```
   cd hub
   ```

5. Enter the command below:

   ```
   setupWindows -options "<options file name>"
   ```

   Where *<options file name>* identifies the file that contains the option values the installer will use.

   With this command, the installer displays all of the panels that appear in a normal GUI installation and all of the fields in the panels contain the values listed in the options file.

Performing a silent install

Database Loader and Business Integration Connect can be installed and uninstalled without either a GUI or user interaction. A silent installation is particularly useful when installing components with the same settings on multiple systems or when a graphical environment is not available.

To install the Database Loader or Business Integration Connect silently, follow these steps:

1. If you are installing the Database Loader, log in as DB2ADMIN.
2. If you are installing Business Integration Connect, log in as the administrator.
3. Open a command line on the machine on which you want to install the code.
4. Navigate to the location of the installation executable. For example:

   ```
   cd DBLoader
   ```

   or

   ```
   cd hub
   ```

5. Enter the command below:

   ```
   setupWindows -options "<options file name>" -silent
   ```

   Where <*options file name*> identifies the file that contains the option values the installer will use.

The installer runs without any user interaction or GUI. When the installation is complete, the installer returns to the command prompt.

Generating an options file

To generate an options file with settings specific to your installation, follow these steps:

1. Log in as the administrator.
2. Open a command line on the machine on which you want to install the code.
3. Navigate to the location of the installation executable.For example:

   ```
   cd DBLoader
   ```

   or

   ```
   cd hub
   ```

4. Enter the command below:

   ```
   setupWinodws -options-record "<options file name>"
   ```

   Where <*options file name*> identifies the file that contains the option values the installer will use.

The installer runs using the GUI. It installs the Database Loader or Business Integration Connect and places the given options file in the install directory (*ProductDir*\IBM\WBIConnect\DBLoader or *ProductDir*\IBM\WBIConnect\ if you used the default value). You can then edit this file with any text editor, or use it without changes to install the product again or create duplicate installs on other machines.

To generate just the options file without installing the product, replace the *options-record* parameter with the *-options-template* command. This command creates the options file with all of the entries necessary to install the product, but each of these entries must be modified with your specific installation settings.

Starting Business Integration Connect

After you have installed Business Integration Connect, the product is ready to run. There are two ways to start Business Integration Connect. You can either start Business Integration Connect as a service or from a command prompt.

To start Business Integration Connect as a service, do the following:

1. Click **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Services**.
2. Right click Business Integration Connect and select **Start**.
3. Right click **IBM WebSphere Application Server V5 - bcgConsole** and select **Start**.
4. Right click **IBM WebSphere Application Server V5 - bcgDocumentMgr** and select **Start**.
5. Right click **IBM WebSphere Application Server V5 - bcgReceiver** and select **Start**.

NOTE: You can also select to have these servers start on start up by right clicking on the servers and selecting Automatic.

To start Business Integration Connect from a command prompt, do the following:

1. From the Community Console script directory, enter the following command:

   ProductDir\IBM\WBIConnect\console\was\bin

2. Start the Community Console by entering the following command:

   ```
   startServer.bat server1
   ```

3. From the Receiver script directory enter the following:

   ProductDir\IBM\WBIConnect\receiver\was\bin

4. Start the Receiver by entering the following command:

   ```
   startServer.bat server1
   ```

5. Navigate to the Document Manager script directory and enter the following:

   ProductDir\IBM\WBIConnect\router\was\bin

6. Start the Document Manager by entering the following command:

   ```
   startServer.bat server1
   ```

7. Open a Web browser and type the following URL:

   Unsecure:

   http://<*hostname*>.<*domain*>:58080/console

Secure:

`https://<hostname>.<domain>:58443/console`

Where `<hostname>` and `<domain>` are the name and location of the computer hosting the Community Console component.

8. Connect to the Document Manager on the following port by typing the following address in a Web browser:

   `http://<hostname>.<domain>:56969`

9. The Web browser displays the Welcome page. Log into Business Integration Connect using the following information:

   - In the **User Name** field, type:

     `hubadmin`

   - In the **Password** field, type:

     `Pa55word`

   - In the **Company Name** field, type:

     `Operator`

   Click **Login**.

10. When you log in the first time, you must create a new password. Enter a new password, then enter the new password a second time in the **Verify** text box.

11. Click **Save**. The system displays the console's initial entry screen

You have now logged into Business Integration Connect. See the *Getting Started* guide for information on what to do next, or see "Testing your installation" on page 90 for a way to test your installation.

Testing your installation

Use this procedure to test your installation when Business Integration Connect is running:

1. Create a user login event-based alert and set yourself up as the contact for the alert. For information about creating an alert and adding a contact to the alert, see "Managing alerts" in the *Community Console User's Guide*.
   - In the **Alert Owner** drop-down list, select **Hub Operator**.
   - In the **Participant** drop-down list, select **Hub Operator**.
   - In the **Event Type** drop-down list, select **Info**.
   - In the **Event Name** drop-down list, select **102002 User Login was successful**.
2. Log out, and then log in again as the Hub Admin user.
3. Check your e-mail for an alert message.

If you encounter any problems with your Business Integration Connect installation, see "Troubleshooting" on page 92.

Uninstalling Business Integration Connect

Use this procedure to uninstall either Business Integration Connect or the Database Loader:

1. If you want to install the components you are uninstalling again, save the options file used to install the components.

NOTE: If you plan to install components again, back up the common directory tree as well as the Console, Receiver, and Document Manager directories. You should also back up your database before using the Database Loader uninstaller.

2. If you installed Business Integration Connect as a Windows Service, you will need to Stop the Receiver, Document Manager, and Consolse before uninstalling Business Integration Connect. Follow the procedures below to stop the Receiver, Document Manager, and Console.
   a. Click **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Services**.
   b. Right click **IBM WebSphere Application Server V5 - bcgConsole** and select **Stop**.
   c. Right click **IBM WebSphere Application Server V5 - bcgDocumentMgr** and select **Stop**.
   d. Right click **IBM WebSphere Application Server V5 - bcgReceiver** and select **Stop**.
3. Shut down WebSphere Business Integration Connect servers in the following order:
   a. Navigate to the *`ProductDir`*`\console\was\bin` directory and execute the following command:

```
stopServer.bat server1
```

b. Navigate to the *ProductDir*`\receiver\was\bin` directory and execute the following command:

```
shutdown_bcg.bat server1
```

c. Navigate to the *ProductDir*`/router/was/bin directory` and execute the following command:

```
shutdown_bcg.bat server1
```

4. In the `_unist` directory, run the uninstaller executable.

   The uninstaller wizard starts and displays the Welcome panel. Click **Next**.

5. If you are uninstalling Business Integration Connect, in the Component selection panel, select the components that you want to remove from this system. You can select multiple components.

   Be careful about uninstalling the common shared files. If you do not install the common shared files into the same location again after uninstalling, many of the configurations in properties files and in the database will require changes.

   Note that Business Integration Connect requires at least one instance of each component. If you remove the only instance of a component, you must install that component on another system. For example, if you remove the only instance of Document Manager on your network, you must install Document Manager on another system.

   Click **Next**. The Uninstaller displays the Summary panel.

6. The Summary panel lists the components that the uninstaller will remove. Review this information. If any of this information is incorrect, click **Back** to return to previous panels and correct it. When all of the information on the summary panel is correct, click **Next**.

7. The uninstaller removes the selected components. When it has removed all of the components, the uninstaller enables the **Finish** button. Click **Finish**.

8. Review the files that remain in the directory structure and then remove the directory tree.

Changing the Oracle JDBC driver

If you used Oracle as your database server, you will need to change the Oracle JDBC driver after you have successfully installed WebSphere Business Integration Connect. Follow the procedure in this section to replace your Oracle JDBC driver.

To replace the Oracle JDBC driver, follow the steps below:

If you are replacing the Oracle JDBC driver in same directory and the full path name to driver file will stay the same, then do the following:

1. Stop the Business Integration Connect Console, Receiver, and Document Manager.

2. Replace the Oracle JDBC driver file, `classes12.zip`.

3. Start the Business Integration Connect Console, Receiver, and Document Manager.

If you are changing the Oracle JDBC driver and the full path name to the driver file changes, then do the following:

1. Stop the Business Integration Connect Console, Receiver, and Document Manager.
2. For each component, the Console, the Receiver, and the Document Manager, remove the existing JDBC datasource using `bcgdatabase.jacl`.

   Remove the JDBC datasource. To call information from bcgdatabase.jacl:

   ```
   ./wsadmin.bat -f bcgdatabase.jacl -conntype NONE uninstall [db2
   | oracle]  <nodeName> <serverName>
   ```

   Use the following values:

   ./wsadmin.bat -f bcgdatabase.jacl -conntype NONE uninstall oracle DefaultNode server1

3. For each component, the Console, the Receiver, and the Document Manager, create the JDBC datasource by calling `bcgdatabase.jacl`.

   Create the JDBC datasource. To call information from `bcgdatabase.jacl`, use the values and command below.Remember to replace the values within the angle brackets, <>, with values specified during your installation.

   ```
    ./wsadmin.bat -f bcgdatabase.jacl -conntype NONE install
   <dbType> <dbName> <dbHostname> <dbPort> <dbUserId>
   <dbPassword><nodeName> <serverName> <dbZipFile> <jndiName>
   ```

4. When installing using the Oracle option, `dbZip`File is the full pathname of the Oracle provided file that should be used to connect to the database. Typically, the file name is `classes12.zip`.

   ```
   ./wsadmin.bat -f bcgdatabase.jacl -conntype NONE install oracle
   <dbName> <dbHostname> <dbPort> <dbUserId> <dbPassword>
   DefaultNode server1 <dbZipFile> datasources/OracleDS
   ```

5. Start the Console, Receiver and Document Manager.

Troubleshooting

If you encountered a problem while installing the Database Loader, consult the Database Loader logs in the `system temp/WBIConnect/logs` directory for information on the problem. Once the problem is resolved, do the following to delete the created database:

1. Run the Database Loader uninstaller and delete the database.
2. Once you have deleted the database, rerun the Database Loader wizard.

In the event that you experience problems while installing the Business Integration Connect components, review the following installation logs:

ProductDir`\IBM\WBIConnect\console\logs`

ProductDir`\IBM\WBIConnect\receiver\logs`

ProductDir\IBM\WBIConnect\router\logs

You should also examine the following runtime logs:

ProductDir\IBM\WBIConnect\console\was\logs\server1

ProductDir\IBM\WBIConnect\receiver\was\logs\server1

ProductDir\IBM\WBIConnect\router\was\logs\server1

Notices and Trademarks

Notices

IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Burlingame Laboratory Director
IBM Burlingame Laboratory
577 Airport Blvd., Suite 800
Burlingame, CA 94010
U.S.A

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurement may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples may include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrates programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. You may copy, modify, and distribute these sample programs in any form without payment to IBM for the purposes of developing, using, marketing, or distributing application programs conforming to IBM's application programming interfaces.

Programming interface information

Programming interface information is intended to help you create application software using this program.

General-use programming interfaces allow you to write application software that obtain the services of this program's tools.

However, this information may also contain diagnosis, modification, and tuning information. Diagnosis, modification and tuning information is provided to help you debug your application software.

Warning: Do not use this diagnosis, modification, and tuning information as a programming interface because it is subject to change.

Trademarks and service marks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM
the IBM logo
AIX
CrossWorlds
DB2
DB2 Universal Database
Lotus
Lotus Notes
MQIntegrator
MQSeries
Tivoli
WebSphere

Microsoft, Windows, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Intel and Xeon are trademarks or registered trademarks of Intel Corporation in the United States, other countries, or both.

Solaris, Java, and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Other company, product or service names may be trademarks or service marks of others.